

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 m 2
Edition : 01.02.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 846 570

Injection pump
Pump designation : PES6A95D320RS2770
EP type number : 0 410 896 905
Governor
Governor design. : RQV350...1350AB1236-
2R
Governor no. : 0 420 213 111

Customer-spec. information
Customer : NAVISTAR

Engine : DTA-360

1st version kW : 134.0
Rated speed : 2700

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 110

Opening
pressure, bar : 250...253

Orifice plate
diameter mm : 0,5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

A01

Prestroke mm : 2.75...2.85
: (2.70...2.90)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1350

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 7.3...7.5

100 s: (7.1...7.7)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 5.8...6.0
Del.quantity cm3/ : 1.7...2.1
100 s: (1.4...2.3)
Spread cm3 : 0.3
100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350
travel mm : 7.30...7.50
2nd speed rpm : 1460
travel mm : 8.10...8.50
3rd speed rpm : 550
travel mm : 3.10...3.50
4th speed rpm : 350
travel mm : 1.30...1.70

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1535
Rack travel in mm : 6.70...9.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1350
Aneroid pressure h: 700

Del.quantity : 73.5...75.5
1000 : (71.5...77.5)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 46...54

Testing:

1st rack travel in: 10.10
Speed rpm : 1405...1435
2nd rack travel in: 4.00
Speed rpm : 1515...1525
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 8...16

Testing:

Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 5.80...6.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 170
Rack travel in m: 9.00...9.10
3rd pressure hPa : 300
Rack travel in m: 10.10...10.50

START CUT-OUT

Speed 1/min : 280 (300)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm3/ : 55.0...59.0
1000 s: (53.0...61.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.10
Speed rpm : 1405...1435

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 17.0...21.0
1000 s: (14.5...23.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Adjust stop lever to 0.5...1.0 mm 835C93
before stop.

Start-of-delivery mark is at start of
delivery of cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 w
Edition : 01.02.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 846 572

Injection pump
Pump designation : PES6A95D320RS2779
EP type number : 0 410 896 903
Governor
Governor design. : RQV350...1350AB1236-5R
Governor no. : 0 420 213 115

Customer-spec. information
Customer : NAVISTAR

Engine : DTA 360

1st version kW : 138.0
Rated speed : 2700

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 110

Opening
pressure, bar : 250...253

Orifice plate
diameter mm : 0,5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.75...2.85
: (2.70...2.90)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1350

Rack travel in mm : 12.40...12.50

Del.quantity cm3/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 5.9...6.1
Del.quantity cm3/ : 1.7...2.1
100 s: (1.5...2.3)
Spread cm3 : 0.3
100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350
travel mm : 7.30...7.50
2nd speed rpm : 1460
travel mm : 8.10...8.50
3rd speed rpm : 550
travel mm : 3.10...3.70
4th speed rpm : 350
travel mm : 1.30...1.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1350
Aneroid pressure h: 900
Del.quantity : 85.5...87.5
1000 : (83.5...89.5)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 44...52

Testing:
1st rack travel in: 11.50
Speed rpm : 1400...1430
2nd rack travel in: 4.00
Speed rpm : 1530...1540
4th rack travel in: 1625
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 350...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.40...12.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 240
Rack travel in m: 10.60...10.70
3rd pressure hPa : 425
Rack travel in m: 11.70...12.10

START CUT-OUT

Speed 1/min : 270 (280)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 68.5...72.5
1000 s: (66.5...74.5)

BREAKAWAY

A04

1st version
1mm rack travel less than
full load rack tr: 11.50
Speed rpm : 1400...1430

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 17.0...21.0
1000 s: (15.0...23.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:
: NAVISTAR #1815226C91

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark is at start of
delivery of cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 w 1
Edition : 01.02.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 846 573

Injection pump
Pump designation : PES6A95D320RS2779
EP type number : 0 410 896 903
Governor
Governor design. : RQV350...1350AB1236-6R
Governor no. : 0 420 213 116

Customer-spec. information
Customer : NAVISTAR

Engine : DT 360

1st version kW : 127.0
Rated speed : 2700

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 110

Opening
pressure, bar : 250...253

Orifice plate
diameter mm : 0,5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.75...2.85
: (2.70...2.90)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1350

Rack travel in mm : 12.30...12.40

Del.quantity cm³/ : 8.3...8.5

100 s: (8.1...8.7)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 5.9...6.1
Del.quantity cm³/ : 1.7...2.1
100 s: (1.5...2.3)
Spread cm³ : 0.3
100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350
travel mm : 7.30...7.50
2nd speed rpm : 1460
travel mm : 8.10...8.50
3rd speed rpm : 550
travel mm : 3.10...3.70
4th speed rpm : 350
travel mm : 1.30...1.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1350
Aneroid pressure h: 900
Del.quantity : 83.5...85.5
1000 : (81.5...87.5)
Spread cm³ : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 44...52

Testing:
1st rack travel in: 11.30
Speed rpm : 1390...1420
2nd rack travel in: 4.00
Speed rpm : 1525...1535
4th rack travel in: 1625
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 350...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.30...12.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...9.80
2nd pressure hPa : 185
Rack travel in m: 10.30...10.40
3rd pressure hPa : 325
Rack travel in m: 11.40...11.80

START CUT-OUT

Speed 1/min : 270 (280)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 67.0...71.0
1000 s: (65.0...73.0)

BREAKAWAY

A06

1st version
1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1390...1420

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 16.20...17.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 17.0...21.0
1000 s: (15.0...23.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:
: NAVISTAR #1815265C91

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark is at start of
delivery of cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IHC 7,6 w 2
Edition : 06.03.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 846 574

Injection pump
Pump designation : PES6A95D32ORS2779
EP type number : 0 410 896 903
Governor
Governor design. : RQV350...1300AB1236-4R
Governor no. : 0 420 213 117

Customer-spec. information
Customer : NAVISTAR

Engine : DT 466

1st version kW : 138.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 2 417 413 038

Inlet press., bar : 2.80

Test nozzle holder
assembly : 1 688 901 110

Opening
pressure, bar : 250...253

Orifice plate
diameter mm : 0,5

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

A07

Prestroke mm : 2.75...2.85
: (2.70...2.90)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 13.00...13.10

Del.quantity cm3/ : 9.2...9.4

100 s: (9.0...9.6)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 6.0...6.2
Del.quantity cm3/ : 1.7...2.1
100 s: (1.5...2.3)
Spread cm3 : 0.3
100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350
travel mm : 7.30...7.50
2nd speed rpm : 1460
travel mm : 8.10...8.50
3rd speed rpm : 550
travel mm : 3.10...3.70
4th speed rpm : 350
travel mm : 1.30...1.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1300
Aneroid pressure h: 900
Del.quantity : 92.5...94.5
1000 : (90.5...96.5)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 42...50

Testing:
1st rack travel in: 12.00
Speed rpm : 1355...1385
2nd rack travel in: 4.00
Speed rpm : 1505...1515
4th rack travel in: 1600
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 350
Rack travel in mm : 6.00...6.20

CONSTANT REGULATION
Speed rpm : 350...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.00...13.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.70...11.90
2nd pressure hPa : 175
Rack travel in m: 12.00...12.10
3rd pressure hPa : 340
Rack travel in m: 12.40...12.80

START CUT-OUT

Speed 1/min : 270 (280)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 89.5...93.5
1000 s: (87.5...95.5)

BREAKAWAY

A08

1st version
1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1355...1385

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 16.20...17.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.00...6.20
Del.quantity cm³/ : 17.0...21.0
1000 s: (15.0...23.0)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks: : NAVISTAR #1815266C91

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark is at start of
delivery of cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RAB 9,7 b 2
Edition : 09.11.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 846 576

Injection pump
Pump designation : PES6A95D420LS2595
EP type number : 0 410 896 930
Governor
Governor design. : RQ200/1050AB1246
Governor no. : 0 420 201 647

Customer-spec. information
Customer : RABA

Engine : D2156 MT6U

1st version kW : 154.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.05)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 12.40...12.50

Del.quantity cm3/ : 12.4...12.6

100 s: (12.2...12.8)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 200.0

Rack travel in mm : 6.9...7.1

Del.quantity cm3/ : 1.1...1.5

100 s: (0.8...1.7)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 500

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Aneroid pressure h: 700

Del.quantity : 124.5...126.5

1000 : (122.5...128.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 500

Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.40

Speed rpm : 1095...1110

2nd rack travel in: 4.00

Speed rpm : 1130...1160

4th rack travel in: 1225
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 200
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack travel: 8.00
Speed rpm : 200
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 280...320

TORQUE CONTROL

Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 12.40...12.50
2nd speed rpm : 500
Rack travel in m: 13.20...13.30
3rd speed rpm : 735
Rack travel in m: 13.00...13.10
4th speed rpm : 840
Rack travel in m: 12.50...12.70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.70...10.80
2nd pressure hPa : 220
Rack travel in m: 12.40...12.50
3rd pressure hPa : 150
Rack travel in m: 11.10...11.30

START CUT-OUT

Speed 1/min : 140 (160)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm³/ : 120.5...123.5
1000 s: (118.0...126.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 79.0...81.0
1000 s: (77.0...83.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 156.0...166.0
1000 s: (153.0...169.0)
Rack travel in mm : 17.50...17.70

Remarks:
: IKARUS

Set idle stop at 200 min -1 to a
control-rod travel of 6.4 mm

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 h 1
 Edition : 24.11.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 846 577
 Injection pump
 Pump designation : PES6A85D410RS2591
 EP type number : 0 410 886 903
 Governor
 Governor design. : RQ300/1325AB1247L
 Governor no. : 0 420 200 114

Customer-spec. information
 Customer : KHD

Engine : BF6L913

1st version kW : 124.0
 Rated speed : 2650

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00

A11

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1325

Rack travel in mm : 12.60...12.70

Del.quantity cm3/ : 8.6...8.7

100 s: (8.4...8.9)

Spread cm3 : 0.3

100 s: (0.4)

2nd speed rpm : 300.0

Rack travel in mm : 8.4...8.6

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 1325

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1325

Aneroid pressure h: 700

Del.quantity : 86.5...87.5

1000 : (84.5...89.5)

Spread cm3 : 3.00

1000 : (4.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 1325

Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.60

Speed rpm : 1370...1385

2nd rack travel in: 4.00

Speed rpm : 1450...1480

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.0

Testing:

Speed rpm : 200
Minimum rack travel: 6.40
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 505...545

TORQUE CONTROL

Dimension a mm : 0.55
Torque control curve - 1st version
1st speed rpm : 1325
Rack travel in m: 12.60...12.70
3rd speed rpm : 815
Rack travel in m: 13.70...13.90
4th speed rpm : 1070
Rack travel in m: 12.90...13.10

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 11.60...11.80

Measurement

Speed 1/min : 800

1st pressure hPa : 700
Rack travel in m: 13.00...13.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 800
Del.quantity cm³/ : 83.0...85.0
1000 s: (80.5...87.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 55.0...56.0
1000 s: (53.0...58.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.60
Speed rpm : 1370...1385

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 15,0 c1
Edition : 30.03.90
Replaces : 27.10.89
Test oil : ISO-4113

Combination no. : 0 400 858 006

Injection pump
Pump designation : PES8A95D412LS2334
EP type number : 0 410 898 998
Governor
Governor design. : RQ250/1100AB793DL
Governor no. : 0 420 202 238

Customer-spec. information
Customer : MAN

Engine : D2858M4

1st version kW : 304.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 681 343 009

Opening
pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.70...1.80
: (1.65...1.75)
Rack travel in mm : 9.00...12.00

Firing order : 1- 2- 7- 8- 4- 5-
6- 3

Phasing : 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 11.5...11.7

100 s: (11.3...11.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 700

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 115.5...117.5

1000 : (113.5...119.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 700

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.10

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1195...1225

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 370...410

TORQUE CONTROL

Dimension a mm : 0.15

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 11.10...11.20

2nd speed rpm : 500

Rack travel in m: 11.40...11.50

3rd speed rpm : 1135

Rack travel in m: 11.20...11.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500

Del.quantity cm3/ : <121.0

1000 s: (<123.5)

Speed rpm : 800

Del.quantity cm3/ : 116.5...119.5

1000 s: (114.0...122.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10

Speed rpm : 1145...1160

Remarks:

: MAN-NR. 1-7545

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 3,1 b 2
 Edition : 30.03.90
 Replaces : 10.2.89
 Test oil : ISO-4113

Combination no. : 0 400 863 008

Injection pump
 Pump designation : PES3A90D320/3RS2658
 EP type number : 0 410 893 004
 Governor
 Governor design. : RSV325...1500A2C505-3R
 Governor no. : 0 420 233 229

Customer-spec. information
 Customer : MWM

Engine : D226B-3

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00

Firing order : 1- 2- 3

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...0.00
 & maximum rack tra: 21.00
 Difference ° CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.20...11.30

Del.quantity cm³/ : 8.9...9.0

100 s: (8.7...9.2)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 9.7...9.9
 Del.quantity cm³/ : 4.6...5.2
 100 s: (4.4...5.4)

Spread cm³ : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1100
 Del.quantity : 89.5...90.5
 1000 : (87.5...92.5)

Spread cm³ : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 39...47

Testing:
 1st rack travel in: 10.20
 Speed rpm : 1140...1150

2nd rack travel in: 4.00
Speed rpm : 1180...1210
3rd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1375
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 9.3
Speed rpm : 325
Rack travel in mm : 9.70...9.90
Rack travel in mm : 2.00
Speed rpm : 480...540

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.20...11.30
2nd speed rpm : 500
Rack travel in m: 11.20...11.40

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.20
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 115.0
1000 s: (112.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 3,0 f
Edition : 06.04.90
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 863 016
Injection pump
Pump designation : PES3A85D410/3RS2780
EP type number : 0 410 883 987
Governor
Governor design. : RSV325...1250A2C2239
-1L
Governor no. : 0 420 232 533

Customer-spec. information
Customer : KHD

Engine : F3L912 F

1st version kW : 40.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
: (2.90...3.10)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 6.4...6.5

100 s: (6.2...6.7)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 8.1...8.3

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 64.0...65.0

1000 : (62.0...67.0)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 98...106

Testing:

1st rack travel in: 10.40

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1345...1375
3rd rack travel in: 4.00
Speed rpm : 1355...1385
4th rack travel in: 1530
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 420...450

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.40...-11.50
2nd speed rpm : 500
Rack travel in m: 11.60...11.70
3rd speed rpm : 840
Rack travel in m: 11.50...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 55.0...57.0
1000 s: (52.5...59.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 115.0...125.0
1000 s: (112.0...128.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 3,0 f 1
 Edition : 02.05.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 863 017
 Injection pump
 Pump designation : PES3A85D410/3RS2780
 EP type number : 0 410 883 987
 Governor
 Governor design. : RSV325...900A4C2239-
 2L
 Governor no. : 0 420 232 538

Customer-spec. information
 Customer : KHD

Engine : F3L912F

1st version kW : 25.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 2

Phasing : 0-120-240
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 710
 Rack travel in mm : 11.70...11.80
 Del.quantity cm3/ : 5.6...5.7
 100 s: (5.4...5.9)
 Spread cm3 : 0.2
 100 s: (-)

2nd speed rpm : 325.0
 Rack travel in mm : 8.1...8.3
 Del.quantity cm3/ : 1.1...1.7
 100 s: (0.9...1.9)
 Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 710
 Del.quantity : 56.5...57.5
 1000 : (54.5...59.5)
 Spread cm3 : 2.50

RATED SPEED

1st version
 Control lever
 position degrees: 90...98

Testing:
 1st rack travel in: 10.70
 Speed rpm : 748...753
 2nd rack travel in: 4.00
 Speed rpm : 789...804
 4th rack travel in: 940
 Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 72...80

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 325

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 320...380

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 752

Del.quantity cm3/ : 48.0...50.0

1000 s: (45.5...52.5)

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 110.0...120.0

1000 s: (107.0...123.0)

Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 3
 Edition : 15.12.89
 Replaces : 2.2.88
 Test oil : ISO-4113

Combination no. : 0 400 864 054

Injection pump
 Pump designation : PES4A85D410/3RS2638
 EP type number : 0 410 884 950
 Governor
 Governor design. : RSV325...1150A0C2168
 L
 Governor no. : 0 420 232 364

Customer-spec. information
 Customer : KHD

Engine : BF4L913

1st version kW : 66.0
 Rated speed : 2300
 2nd version kW : 60.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1110

Rack travel in mm : 12.30...12.40

Del.quantity cm³/ : 8.0...8.1

100 s: (7.8...8.3)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 8.1...8.3

Del.quantity cm³/ : 0.9...1.5

100 s: (0.7...1.7)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1110

Del.quantity : 80.0...81.0

1000 : (78.0...83.0)

Spread cm³ : 3.00

1000 : (4.50)

2nd version

Speed rpm : 1150

Del.quantity cm³/ : 74.5...75.5

1000 s: (72.5...77.5)

Spread cm³ : 3.00

1000 s: (4.50)

RATED SPEED

1st version

Control lever
position degrees: 49...57

Testing:

1st rack travel in: 11.30
Speed rpm : 1155...1165
2nd rack travel in: 4.00
Speed rpm : 1250...1280
3rd rack travel in: 4.00
Speed rpm : 1320...1350
4th rack travel in: 1430
Speed rpm : 0.30...1.40

2nd version

Control lever
position degrees: 52...60

Testing:

1st rack travel in: 9.60
Speed rpm : 1220...1230
2nd rack travel in: 4.00
Speed rpm : 1325...1355
4th rack travel in: 1475
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 26...34
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.60...7.80
Rack travel in mm : 2.00
Speed rpm : 530...580

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1110
Rack travel in m: 12.30...12.40
2nd speed rpm : 500
Rack travel in m: 13.10...13.20
4th speed rpm : 940
Rack travel in m: 12.70...12.90

Torque control curve - 2nd version

1st speed rpm : 1150
Rack travel in m: 10.5...10.6
2nd speed rpm : 500
Rack travel in m: 11.2...11.3
3rd speed rpm : 900
Rack travel in m: 10.9...11.2

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 79.5...81.5
1000 s: (77.0...84.0)

2nd version

Speed rpm : 800
Del.quantity cm3/ : 65.5...68.5
1000 s: (63.5...70.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1155...1165

2nd version

1mm rack travel less than
full load rack tr: 9.50
Speed rpm : 1220...1230

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...110.0
1000 s: (97.0...113.0)
Rack travel in mm : 16.80...17.20

Remarks:

: S29=DX 92=DX4.70 (1)
: S28=DX 86=DX4.50 (2)

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 4,1 b 1
 Edition : 05.08.88
 Replaces : 1.86
 Test oil : ISO-4113
 Combination no. : 0 400 864 057
 Injection pump
 Pump designation : PES4A90D320/3RS2659
 EP type number : 0 410 894 028
 Governor
 Governor design. : RSV325...1500A2C505-2R
 Governor no. : 0 420 233 196

Customer-spec. information
 Customer : MWM

Engine : D226B-4

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...0.00
 & maximum rack tra: 21.00
 Difference ° CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1500

Rack travel in mm : 11.20...11.30

Del.quantity cm3/ : 8.9...9.0

100 s: (8.7...9.2)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 7.0...7.2
 Del.quantity cm3/ : 0.8...1.4
 100 s: (0.6...1.6)
 Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1500

Del.quantity : 89.5...90.5

1000 : (87.5...92.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 59...67

Testing:

1st rack travel in: 9.50

Speed rpm : 1540...1550

2nd rack travel in: 4.00
Speed rpm : 1590...1620
3rd rack travel in: 4.00
Speed rpm : 1615...1645
4th rack travel in: 1780
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.6

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 7.00...7.20
Rack travel in mm : 2.00
Speed rpm : 465...525

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1540...1550

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 131.0...141.0
1000 s: (128.0...144.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 43
 Edition : 04.05.90
 Replaces : 7.4.89
 Test oil : ISO-4113
 Combination no. : 0 400 864 074
 Injection pump
 Pump designation : PES4A85D410/3RS2638
 EP type number : 0 410 884 950
 Governor
 Governor design. : RSV325..1150A0C2168-4L
 Governor no. : 0 420 232 524

Customer-spec. information
 Customer : KHD

Engine : BF4L913T

1st version kW : 60.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 7.1...7.2

100 s: (6.9...7.4)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 8.8...9.0

Del.quantity cm3/ : 1.6...2.2

100 s: (1.4...2.4)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 71.5...72.5

1000 : (69.5...74.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 100...108

Testing:

1st rack travel in: 10.40

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1270...1300

3rd rack travel in: 4.00

Speed rpm : 1330...1360
4th rack travel in: 1500
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 76...84
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 8.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 8.80...9.00
Rack travel in mm : 2.00
Speed rpm : 720...780

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.40...11.50
2nd speed rpm : 500
Rack travel in m: 12.50...12.60
3rd speed rpm : 940
Rack travel in m: 11.90...12.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm³/ : 71.5...73.5
1000 s: (69.0...76.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...140.0
1000 s: (127.0...143.0)
Rack travel in mm : 19.50...21.00

Remarks:

: DX 3 X

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 4,1 i
 Edition : 06.04.90
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 864 075

Injection pump
 Pump designation : PES4A85D410/3RS2781
 EP type number : 0 410 884 945
 Governor
 Governor design. : RSV325...1250A2C2239
 -1L
 Governor no. : 0 420 232 533

Customer-spec. information
 Customer : KHD

Engine : F4L912F

1st version kW : 54.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 6.4...6.5

100 s: (6.2...6.7)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 8.1...8.3
 Del.quantity cm3/ : 1.0...1.6
 100 s: (0.8...1.8)

Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 64.0...65.0
 1000 : (62.0...67.0)

Spread cm3 : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 98...106

Testing:
 1st rack travel in: 10.40
 Speed rpm : 1290...1300
 2nd rack travel in: 4.00
 Speed rpm : 1345...1375
 3rd rack travel in: 4.00

Speed rpm : 1355...1385
4th rack travel in: 1530
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 420...480

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.40...11.50
2nd speed rpm : 500
Rack travel in m: 11.60...11.70
3rd speed rpm : 840
Rack travel in m: 11.50...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 55.0...57.0
1000 s: (52.5...59.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.40
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 115.0...125.0
1000 s: (112.0...128.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MWM 4,1 b 2
 Edition : 13.12.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 864 076
 Injection pump
 Pump designation : PES4A90D320/3RS2659
 EP type number : 0 410 894 028
 Governor
 Governor design. : RSV325...1250AOC2182
 -7R
 Governor no. : 0 420 233 258
 Customer-spec. information
 Customer : MWM
 Engine : TD224/04

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve
 : 1 417 413 000
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00
 & maximum rack tra: 21.00
 Difference ° CS : 3.50...4.50

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 11.50...11.60
 Del.quantity cm3/ : 9.1...9.2
 100 s: (8.9...9.4)
 Spread cm3 : 0.3
 100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 7.0...7.2
 Del.quantity cm3/ : 0.8...1.4
 100 s: (0.6...1.6)
 Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Aneroid pressure h: 700
 Del.quantity : 91.5...92.5
 1000 : (89.5...94.5)
 Spread cm3 : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 45...53

Testing:
 1st rack travel in: 10.50

Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1325...1355
3rd rack travel in: 4.00
Speed rpm : 1340...1370
4th rack travel in: 1505
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 470...530

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.50...11.60
2nd speed rpm : 500
Rack travel in m: 12.60...12.70
3rd speed rpm : 890
Rack travel in m: 11.90...12.10

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 12.60...12.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.40...10.50
2nd pressure hPa : 185
Rack travel in m: 11.60...11.70
3rd pressure hPa : 90
Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 800
Del.quantity cm3/ : 101.0...103.0
1000 s: (98.5...105.5)

Aneroid pressure h: 185
Speed rpm : 500
Del.quantity cm3/ : 79.0...81.0
1000 s: (76.5...83.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 61.0...63.0
1000 s: (59.0...65.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 132.0...142.0
1000 s: (129.0...145.0)
Rack travel in mm : 19.50...21.00

Remarks:

: STILL

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 4,1 j
 Edition : 05.03.90
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 864 077

Injection pump
 Pump designation : PES4A95D410/3RS2789
 EP type number : 0 410 894 995
 Governor
 Governor design. : RSV325...1150A5C2244
 L
 Governor no. : 0 420 232 536

Customer-spec. information
 Customer : KHD

Engine : F4L913

1st version kW : 68.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 9.0...9.2
 100 s: (8.8...9.4)

Spread cm3 : 0.3
 100 s: (0.6)

2nd speed rpm : 325.0
 Rack travel in mm : 8.3...8.5
 Del.quantity cm3/ : 1.0...1.6
 100 s: (0.7...1.8)

Spread cm3 : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 90.0...92.0
 1000 : (88.0...94.0)

Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 45...53

Testing:
 1st rack travel in: 11.80
 Speed rpm : 1190...1200
 2nd rack travel in: 4.00
 Speed rpm : 1240...1250
 3rd rack travel in: 4.00

Speed rpm : 1250...1280
4th rack travel in: 1415
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 400...460

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.80...12.90
2nd speed rpm : 500
Rack travel in m: 13.20...13.30
4th speed rpm : 1070
Rack travel in m: 13.00...13.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 88.5...91.5
1000 s: (86.0...94.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...13.0
1000 s: (117.0...16.0)
Rack travel in mm : 19.50...21.00

Remarks:

: TM 2

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 4,1 i 1
 Edition : 02.05.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 864 078
 Injection pump
 Pump designation : PES4A85D410/3RS2781
 EP type number : 0 410 884 945
 Governor
 Governor design. : RSV325...900A4C2239-
 2L
 Governor no. : 0 420 232 538

Customer-spec. information
 Customer : KHD

Engine : F4L912F

1st version kW : 34.0
 Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 710

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 5.6...5.7

100 s: (5.4...5.9)

Spread cm3 : 0.2

2nd speed rpm : 325.0

Rack travel in mm : 8.1...8.3

Del.quantity cm3/ : 1.1...1.7

100 s: (0.9...1.9)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 710

Del.quantity : 56.5...57.5

1000 : (54.5...59.5)

Spread cm3 : 2.50

RATED SPEED

1st version

Control lever

position degrees: 90...98

Testing:

1st rack travel in: 10.70

Speed rpm : 748...753

2nd rack travel in: 4.00

Speed rpm : 789...804

4th rack travel in: 940

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 72...80
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 320...380

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 752
Del.quantity cm3/ : 48.0...50.0
1000 s: (45.5...52.5)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 5,1 d 2
 Edition : 02.01.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 865 025
 Injection pump
 Pump designation : PES5A80D410/3RS2526
 EP type number : 0 410 885 999
 Governor
 Governor design. : RSV325...1250A5C2239
 Governor no. : 0 420 232 526

Customer-spec. information
 Customer : KHD

Engine : F5L912

1st version kW : 68.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 6.9...7.0

100 s: (6.8...7.2)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.4...7.6

Del.quantity cm3/ : 0.8...1.4

100 s: (0.6...1.5)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 69.5...70.5

1000 : (68.0...72.0)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 50...58

Testing:

1st rack travel in: 10.80

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

3rd rack travel in: 4.00

Speed rpm : 1345...1375
4th rack travel in: 1510
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 400...460

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.80...11.90
2nd speed rpm : 750
Rack travel in m: 11.80...12.00

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 750
Del.quantity cm3/ : 54.5...56.5
1000 s: (52.5...58.5)
Speed rpm : 100
Del.quantity cm3/ : 63.0...65.0
1000 s: (61.0...67.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 105.0...115.0
1000 s: (102.0...118.0)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 7.40...7.60
Del.quantity cm3/ : 8.0...14.0
1000 s: (6.5...15.5)

Spread cm3 : 2.50
1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 5,1 i
Edition : 01.02.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 865 025

Injection pump
Pump designation : PES5A80D410/3RS2782
EP type number : 0 410 885 999
Governor
Governor design. : RSV325...1250A5C2239
Governor no. : 0 420 232 526

Customer-spec. information
Customer : KHD

Engine : F5L912

1st version kW : 68.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness : 6.00X2.00X600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
: (2.90...3.10)

Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 5- 4- 2

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 6.9...7.0

100 s: (6.8...7.2)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.4...7.6

Del.quantity cm3/ : 0.8...1.4

100 s: (0.6...1.5)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 69.5...70.5

1000 : (68.0...72.0)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 50...58

Testing:

1st rack travel in: 10.80

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

3rd rack travel in: 4.00

Speed rpm : 1345...1375
4th rack travel in: 1510
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 400...460

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.80...11.90
2nd speed rpm : 750
Rack travel in m: 11.80...12.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 54.5...56.5
1000 s: (52.5...58.5)
Speed rpm : 1000
Del.quantity cm3/ : 63.0...65.0
1000 s: (61.0...67.0)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 105.0...115.0
1000 s: (102.0...118.0)

LOW IDLE

Speed rpm : 325
Rack travel in mm : 7.40...7.60
Del.quantity cm3/ : 8.0...14.0
1000 s: (6.5...15.5)

Spread cm3 : 2.50
1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FOR 5,9 d 1
Edition : 06.04.90
Replaces : -
Test oil : ISO-4113
Combination no. : 0 400 866 104E
Injection pump
Pump designation : PES6A90D210RS2628
EP type number : 0 410 896 074
Governor
Governor design. : RSV325...1200A0C2140
Governor no. : 0 420 232 372

Customer-spec. information
Customer : FORD/GB

Engine : DOVER

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000
Inlet press., bar : 1.50
Test nozzle holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
Test lines : 1 680 750 014
Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
Prestroke mm : 2.70...2.80
: (2.65...2.85)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1175
Rack travel in mm : 11.10...11.20
Del.quantity cm³/ : 7.8...7.9
100 s: (7.6...8.1)
Spread cm³ : 0.3
100 s: (0.5)
2nd speed rpm : 350.0
Rack travel in mm : 5.2...5.4
Del.quantity cm³/ : 0.5...1.1
100 s: (0.3...1.3)
Spread cm³ : 0.2
100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1175
Aneroid pressure h: 700
Del.quantity : 78.5...79.5
1000 : (76.5...81.5)
Spread cm³ : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 10.10
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1360...1390
3rd rack travel in: 4.00
Speed rpm : 1365...1395
4th rack travel in: 1540

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 85...93

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 4.8

Testing:

Speed rpm : 100

Minimum rack travel: 19.50

Speed rpm : 350

Rack travel in mm : 5.20...5.40

Rack travel in mm : 2.00

Speed rpm : 490...550

Speed rpm : 625

Maximum rack travel: 1.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1175

Rack travel in m: 11.10...11.20

2nd speed rpm : 500

Rack travel in m: 11.10...11.30

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 700

Rack travel mm : 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 9.90...10.10

2nd pressure hPa : 500

Rack travel in m: 10.70...10.80

3rd pressure hPa : 380

Rack travel in m: 10.20...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm³/ : 44.0...46.0

1000 s: (42.0...48.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10

Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 76.0...90.0

1000 s: (73.0...93.0)

Rack travel in mm : 19.50...21.00

Remarks:

At start of delivery, locating pin must latch into slit in pointer.

Test electrically-released starting quantity (EES) with 12 volts

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 k 2
 Edition : 06.03.90
 Replaces : 15.6.88
 Test oil : ISO-4113
 Combination no. : 0 400 866 124
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1250AOC2216
 -2R
 Governor no. : 0 420 233 217

Customer-spec. information
 Customer : C.D.C.

Engine : 6 CT 830

1st version kW : 160.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00X2.00X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.00...12.10

Del.quantity cm³/ : 12.1...12.3

100 s: (11.9...12.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.7...5.9

Del.quantity cm³/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 121.0...123.0

1000 : (119.0...125.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 11.00
Speed rpm : 1290...1300
2nd rack travel in: 4.00
Speed rpm : 1395...1425
3rd rack travel in: 4.00
Speed rpm : 1400...1430
4th rack travel in: 1500
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 33...41
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.3

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.70...5.90

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 12.00...12.10
2nd speed rpm : 750
Rack travel in m: 12.40...12.60

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 750
Del.quantity cm3/ : 122.0...126.0
1000 s: (120.0...128.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.70...5.90
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)

Spread cm3 : 3.50
1000 s: (5.50)

Remarks: : C.D.C. # 3915982

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 r
Edition : 03.11.89
Replaces : 28.11.88
Test oil : ISO-4113

Combination no. : 0 400 866 125

Injection pump
Pump designation : PES6A85D410/3RS2761
EP type number : 0 410 886 895
Governor
Governor design. : RSV325...1150A8C674-1L
Governor no. : 0 420 232 518

Customer-spec. information
Customer : KHD

Engine : BF6L913

1st version kW : 112.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 8.4...8.5

100 s: (8.2...8.7)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0
Rack travel in mm : 7.5...7.7
Del.quantity cm3/ : 0.9...1.5
100 s: (0.7...1.7)
Spread cm3 : 0.2
100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Aneroid pressure h: 700
Del.quantity : 84.5...85.5
1000 : (82.5...87.5)
Spread cm3 : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 48...56

Testing:
1st rack travel in: 11.10
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1225...1255

3rd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1410
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.50...7.70
Rack travel in mm : 2.00
Speed rpm : 420...480

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.10...12.20
2nd speed rpm : 750
Rack travel in m: 12.60...12.70
3rd speed rpm : 855
Rack travel in m: 12.30...12.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 11.50...11.60

Measurement

Speed 1/min : 500

1st pressure hPa : 350
Rack travel in m: 11.90...12.00
3rd pressure hPa : 700
Rack travel in m: 12.60...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del.quantity cm³/ : 87.0...89.0
1000 s: (84.5...91.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 64.5...65.5
1000 s: (62.5...67.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 17.00...17.40

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 r 1
 Edition : 03.11.89
 Replaces : 28.11.88
 Test oil : ISO-4113
 Combination no. : 0 400 866 126
 Injection pump
 Pump designation : PES6A85D410/3RS2761
 EP type number : 0 410 886 895
 Governor
 Governor design. : RSV325...1150A8C673-
 2L
 Governor no. : 0 420 232 519

Customer-spec. information
 Customer : KHD

Engine : BF6L913

1st version kW : 112.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 8.4...8.5

100 s: (8.2...8.7)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.5...7.7

Del.quantity cm3/ : 0.9...1.5

100 s: (0.7...1.7)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 84.5...85.5

1000 : (82.5...87.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 11.10

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1225...1255

3rd rack travel in: 4.00

Speed rpm : 1245...1275
4th rack travel in: 1410
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 13...21

Setting point w/out bumper spring

Speed rpm : 325

Rack travel in mm : 7.1

Testing:

Speed rpm : 100

Minimum rack travel: 19.50

Speed rpm : 325

Rack travel in mm : 7.50...7.70

Rack travel in mm : 2.00

Speed rpm : 420...480

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 12.10...12.20

2nd speed rpm : 750

Rack travel in m: 12.60...12.70

3rd speed rpm : 855

Rack travel in m: 12.30...12.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750

Del. quantity cm³/ : 87.0...89.0

1000 s: (84.5...91.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.10

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100

Del. quantity cm³/ : 110.0...120.0

1000 s: (107.0...123.0)

Rack travel in mm : 17.00...17.40

Remarks:

: OHRENSTEIN & KOPPEL

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 r 2
 Edition : 03.11.89
 Replaces : 21.4.89
 Test oil : ISO-4113
 Combination no. : 0 400 866 127
 Injection pump
 Pump designation : PES6A85D410/3RS2761
 EP type number : 0 410 886 895
 Governor
 Governor design. : RSV325...1150A8C707-5L
 Governor no. : 0 420 232 517

Customer-spec. information
 Customer : KHD

Engine : BF6L913

1st version kW : 112.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.10...12.20

Del.quantity cm³/ : 8.4...8.5

100 s: (8.2...8.7)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.5...7.7

Del.quantity cm³/ : 0.9...1.5

100 s: (0.7...1.7)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del.quantity : 84.5...85.5

1000 : (82.5...87.5)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 11.10

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1225...1255

3rd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1410
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.50...7.70
Rack travel in mm : 2.00
Speed rpm : 420...480

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.10...12.20
2nd speed rpm : 750
Rack travel in m: 12.60...12.70
3rd speed rpm : 855
Rack travel in m: 12.30...12.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 11.50...11.60

Measurement

Speed 1/min : 500

1st pressure hPa : 350
Rack travel in m: 11.90...12.00
3rd pressure hPa : 700
Rack travel in m: 12.60...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del.quantity cm3/ : 87.0...89.0
1000 s: (84.5...91.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 64.5...65.5
1000 s: (62.5...67.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 17.00...17.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 l
Edition : 06.03.90
Replaces : 7.4.89
Test oil : ISO-4113

Combination no. : 0 400 866 128

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV410...950A0C2190-26R
Governor no. : 0 420 233 224

Customer-spec. information
Customer : C.D.C.

Engine : 6 CT

1st version kW : 138.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...3.00)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 950

Rack travel in mm : 9.60...9.70

Del.quantity cm3/ : 8.4...8.6

100 s: (8.2...8.8)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 410.0
Rack travel in mm : 5.0...5.2
Del.quantity cm3/ : 1.6...2.0
100 s: (1.3...2.2)
Spread cm3 : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 950
Del.quantity : 84.5...86.5
1000 : (82.5...88.5)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 40...48

Testing:

1st rack travel in: 8.60
Speed rpm : 1010...1020
2nd rack travel in: 4.00
Speed rpm : 1050...1080
3rd rack travel in: 4.00
Speed rpm : 1055...1085
4th rack travel in: 1150
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 24...32
Setting point w/out bumper spring
Speed rpm : 410
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 410
Rack travel in mm : 5.00...5.20

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 950
Rack travel in m: 9.60...9.70
2nd speed rpm : 650
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 99.0...103.0
1000 s: (97.0...105.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack travel: 8.60
Speed rpm : 1010...1020

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 410
Rack travel in mm : 5.00...5.20
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)

Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: C.D.C. # 3915983

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 l 9
Edition : 06.03.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 866 129

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV400...1100AOC2190
-27R
Governor no. : 0 420 233 225

Customer-spec. information
Customer : C.D.C.

Engine : 6CT 8.3

1st version kW : 111.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.70...9.80

Del.quantity cm3/ : 8.5...8.7

100 s: (8.3...8.9)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0
Rack travel in mm : 5.3...5.5
Del.quantity cm3/ : 1.1...1.5
100 s: (0.9...1.8)
Spread cm3 : 0.6
100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del.quantity : 85.0...87.0
1000 : (83.0...89.0)
Spread cm3 : 4.00
1000 : (6.50)

RATED SPEED

1st version
Control lever
position degrees: 50...58

Testing:

1st rack travel in: 8.70
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1205...1235
3rd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 30...38
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 4.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.30...5.50

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.70...9.80
2nd speed rpm : 750
Rack travel in m: 10.80...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 94.0...98.0
1000 s: (92.0...100.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.70
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.30...5.50
Del.quantity cm³/ : 11.5...15.5
1000 s: (9.0...18.0)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915973

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a73
Edition : 01.02.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 132LB

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100AOC2190
-33R
Governor no. : 0 420 233 237

Cust. part no. : 3917456

Customer-spec. information
Customer : C.D.C.

Engine : 6 CTA 8.3ltr

1st version kW : 174.5
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
Rack travel in mm : 12.70...12.80
Del.quantity cm3/ : 12.6...12.8
100 s: (12.4...13.0)
Spread cm3 : 0.4
100 s: (0.6)

2nd speed rpm : 400.0
Rack travel in mm : 5.5...5.7
Del.quantity cm3/ : 1.6...2.0
100 s: (1.3...2.2)
Spread cm3 : 0.6
100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del.quantity : 126.5...128.5
1000 : (124.5...130.5)
Spread cm3 : 4.00
1000 : (6.50)

RATED SPEED

1st version
Control lever
position degrees: 41...49

Testing:

1st rack travel in: 11.70
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
3rd rack travel in: 4.00
Speed rpm : 1205...1235
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.1

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.00...5.20

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 155.0...175.0
1000 s: (150.0...180.0)
Rack travel in mm : 16.20...16.40

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.50...5.70
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

:

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 o 2
 Edition : 24.11.89
 Replaces : 21.4.89
 Test oil : ISO-4113

Combination no. : 0 400 866 136

Injection pump
 Pump designation : PES6A85D410/3RS2761
 EP type number : 0 410 886 895
 Governor
 Governor design. : RSV325...1400A2C661-
 1L
 Governor no. : 0 420 232 516

Customer-spec. information
 Customer : KHD

Engine : BF6L913

1st version kW : 112.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 11.90...12.00

Del.quantity cm3/ : 8.2...8.3
 100 s: (8.0...8.5)

Spread cm3 : 0.3
 100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 7.4...7.6
 Del.quantity cm3/ : 0.8...1.4
 100 s: (0.6...1.6)

Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1200
 Del.quantity : 82.5...83.5
 1000 : (80.5...85.5)

Spread cm3 : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control Lever
 position degrees: 43...51

Testing:

1st rack travel in: 10.90
 Speed rpm : 1240...1250
 2nd rack travel in: 4.00
 Speed rpm : 1285...1315
 3rd rack travel in: 4.00

Speed rpm : 1305...1335
4th rack travel in: 1470
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 7.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 7.40...7.60
Rack travel in mm : 2.00
Speed rpm : 440...500

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 11.90...12.00
2nd speed rpm : 750
Rack travel in m: 12.70...12.80
3rd speed rpm : 1020
Rack travel in m: 12.30...12.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 85.0...87.0
1000 s: (82.5...89.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 17.00...17.40

Remarks:

: ORENSTEIN & KOPPEL

APPLICATION

Excavator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 r 3
 Edition : 03.11.89
 Replaces : 16.6.89
 Test oil : ISO-4113
 Combination no. : 0 400 866 137
 Injection pump
 Pump designation : PES6A85D410/3RS2761
 EP type number : 0 410 886 895
 Governor
 Governor design. : RSV325...1400A2C2205
 -1L
 Governor no. : 0 420 232 520

Customer-spec. information
 Customer : KHD

Engine : BF6L913

1st version kW : 118.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
 : (2.45...2.65)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 12.30...12.40

Del.quantity cm3/ : 8.7...8.8

100 s: (8.5...9.0)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 7.3...7.5

Del.quantity cm3/ : 0.8...1.4

100 s: (0.6...1.6)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 700

Del.quantity : 87.5...88.5

1000 : (85.5...90.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 43...51

Testing:

1st rack travel in: 11.30

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1345...1375

3rd rack travel in: 4.00
Speed rpm : 1360...1390
4th rack travel in: 1525
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 13...21
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.30...7.50
Rack travel in mm : 2.00
Speed rpm : 435...495

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 12.30...12.40
2nd speed rpm : 750
Rack travel in m: 12.80...12.90
3rd speed rpm : 940
Rack travel in m: 12.50...12.70

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 11.40...11.50

Measurement

Speed 1/min : 500

1st pressure hPa : 300
Rack travel in m: 11.60...11.70
3rd pressure hPa : 700
Rack travel in m: 12.80...12.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750
Del.quantity cm³/ : 88.5...90.5
1000 s: (86.0...93.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 62.5...63.5
1000 s: (60.5...65.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 110.0...120.0
1000 s: (107.0...123.0)
Rack travel in mm : 17.00...17.40

Remarks:

APPLICATION

Wheel loader

Excavator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 5,9 v 2
 Edition : 01.02.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 143
 Injection pump
 Pump designation : PES6A95D120RS2773
 EP type number : 0 410 896 904
 Governor
 Governor design. : RSV350...1250A0C2237
 R
 Governor no. : 0 420 233 240

Customer-spec. information
 Customer : CUMMINS

Engine : 6BT

1st version kw : 118.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.10...2.20
 : (2.05...2.25)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 9.40...9.50

Del.quantity cm3/ : 8.6...8.8

100 s: (8.3...9.0)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.1...6.3

Del.quantity cm3/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Del.quantity : 86.0...88.0

1000 : (83.5...90.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 91...99

Testing:

1st rack travel in: 8.40

Speed rpm : 1290...1300

2nd rack travel in: 4.00
Speed rpm : 1355...1385
3rd rack travel in: 4.00
Speed rpm : 1370...1400
4th rack travel in: 1530
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.0

Testing:
Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 5.40...5.60
Rack travel in mm : 2.00
Speed rpm : 465...525

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 9.40...9.50
2nd speed rpm : 500
Rack travel in m: 9.40...9.60

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm³/ : 69.5...72.5
1000 s: (67.5...74.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.40
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 107.0...117.0
1000 s: (104.0...120.0)
Rack travel in mm : 14.10...14.50

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.10...6.30
Del.quantity cm³/ : 10.0...16.0
1000 s: (7.5...18.5)

Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

Start-of-delivery mark 11.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a68
Edition : 01.02.90
Replaces : 7.4.89
Test oil : ISO-4113

Combination no. : 0 400 866 145

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100A0C2190
-35R
Governor no. : 0 420 233 242

Customer-spec. information
Customer : C.D.C.

Engine : 6 C 8.3 ltr.

1st version kW : 112.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test Lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.30...11.40

Del.quantity cm3/ : 10.5...10.7

100 s: (10.3...10.9)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 105.5...107.5

1000 : (103.5...109.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 10.30
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1195...1225
3rd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.30
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:
: C.D.C. # 3915955

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 L10
Edition : 06.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 148

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV415..1175A0C2190-43R
Governor no. : 0 420 233 249

Customer-spec. information
Customer : C.D.C

Engine : 6 CT

1st version kW : 129.0
Rated speed : 2350

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
(2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1175

Rack travel in mm : 10.40...10.50

Del.quantity cm3/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 415.0

Rack travel in mm : 5.1...5.3

Del.quantity cm3/ : 1.5...1.9

100 s: (1.3...2.1)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1175

Del.quantity : 96.0...98.0

1000 : (94.0...100.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 56...64

Testing:

1st rack travel in: 9.40
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1270...1300
3rd rack travel in: 4.00
Speed rpm : 1275...1305
4th rack travel in: 1350
Speed rpm : 0.30...0.70

LOW IDLE 1

Control lever
position degrees: 32...40
Setting point w/out bumper spring
Speed rpm : 415
Rack travel in mm : 4.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 415
Rack travel in mm : 5.10...5.30

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1175
Rack travel in m: 10.40...10.50
2nd speed rpm : 800
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm3/ : 98.0...102.0
1000 s: (96.0...104.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 145.0...165.0
1000 s: (140.0...170.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 415
Rack travel in mm : 5.10...5.30
Del.quantity cm3/ : 15.0...19.0
1000 s: (13.0...21.0)

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3919459

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 L12
Edition : 02.05.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 149

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV400...1000A0C2190
-44R
Governor no. : 0 420 233 250

Customer-spec. information
Customer : C.D.C.

Engine : 6 CTA

1st version kW : 166.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.90...13.00

Del.quantity cm³/ : 13.2...13.4

100 s: (13.0...13.6)

Spread cm³ : 0.4

100 s: (0.6)

2nd speed rpm : 375.0

Rack travel in mm : 5.0...5.2

Del.quantity cm³/ : 1.4...1.8
100 s: (1.2...2.0)

Spread cm³ : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 132.5...134.5

1000 : (130.5...136.5)

Spread cm³ : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 34...42

Testing:

1st rack travel in: 11.90
Speed rpm : 1050...1060
2nd rack travel in: 4.00
Speed rpm : 1110...1140
3rd rack travel in: 4.00
Speed rpm : 1110...1140
4th rack travel in: 1200
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 375
Rack travel in mm : 4.6

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 375
Rack travel in mm : 5.00...5.20

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.90...13.00
2nd speed rpm : 750
Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 141.5...145.5
1000 s: (139.5...147.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90
Speed rpm : 1050...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 145.0...165.0
1000 s: (140.0...170.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 375
Rack travel in mm : 5.00...5.20
Del.quantity cm3/ : 14.0...18.0
1000 s: (12.0...20.0)

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915570

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8.3 L 8
Edition : 02.05.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 866 150

Injection pump
Pump designation : PES6A100D320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV400...1100AOC2190
-45R
Governor no. : 0 420 233 253

Customer-spec. information
Customer : C.D.C.

Engine : 6CT 8.3

1st version kW : 134.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.90...11.00

Del.quantity cm³/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm³ : 0.4

100 s: (0.6)

2nd speed rpm : 375.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 2.3...2.7

100 s: (2.1...2.9)

Spread cm³ : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 101.5...103.5

1000 : (99.5...105.5)

Spread cm³ : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 51...59

Testing:

1st rack travel in: 9.90
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1230...1240
3rd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 31...39
Setting point w/out bumper spring
Speed rpm : 375
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 375
Rack travel in mm : 5.90...6.10

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.90...11.00
2nd speed rpm : 750
Rack travel in m: 11.90...12.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 114.5...118.5
1000 s: (112.5...120.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.90
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 375
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 23.0...27.0
1000 s: (21.0...29.0)

Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915974

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 o
Edition : 01.02.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 866 151

Injection pump
Pump designation : PES6A100D320/3RS2691
-4

EP type number : 9 410 230 030

Governor

Governor design. : RSV450...1100A0C2238
-R

Governor no. : 0 420 233 254

Customer-spec. information

Customer : C.D.C.

Engine : 6CT830

1st version kW : 151.0

Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 10.50

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Phasing

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 11.8...12.0

100 s: (11.6...12.2)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 450.0

Rack travel in mm : 5.7...5.9

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 900

Del.quantity : 118.5...120.5

1000 : (116.5...122.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 11.10
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 450
Rack travel in mm : 5.70...5.90

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.10...12.20
2nd speed rpm : 750
Rack travel in m: 13.10...13.30

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.10...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.40...10.60
2nd pressure hPa : 385
Rack travel in m: 11.40...11.50
3rd pressure hPa : 560
Rack travel in m: 12.60...13.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 750
Del.quantity cm³/ : 133.0...137.0
1000 s: (131.0...139.0)
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 78.0...80.0
1000 s: (76.0...82.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 450
Rack travel in mm : 5.70...5.90
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915996
Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 u
 Edition : 01.02.90
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 400 866 152

Injection pump
 Pump designation : PES6A85D410/3RS2783
 EP type number : 0 410 886 893
 Governor
 Governor design. : RSV325...1250A5C2239
 L

Governer no. : 0 420 232 526

Customer-spec. information
 Customer : KHD

Engine : F6L912F

1st version kW : 82.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 6.9...7.0
 100 s: (6.7...7.2)

Spread cm3 : 0.3
 100 s: (0.5)

2nd speed rpm : 325.0
 Rack travel in mm : 7.4...7.6
 Del.quantity cm3/ : 0.8...1.4
 100 s: (0.6...1.6)

Spread cm3 : 0.2
 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 69.5...70.5
 1000 : (67.5...72.5)

Spread cm3 : 3.00
 1000 : (5.00)

RATED SPEED

1st version
 Control lever
 position degrees: 100...108

Testing:
 1st rack travel in: 10.80
 Speed rpm : 1290...1300
 2nd rack travel in: 4.00
 Speed rpm : 1330...1360
 3rd rack travel in: 4.00

Speed rpm : 1345...1375
4th rack travel in: 1510
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 65...73
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 400...460

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.80...11.90
2nd speed rpm : 750
Rack travel in m: 11.80...12.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 54.5...56.5
1000 s: (52.0...59.0)
Speed rpm : 1000
Del.quantity cm3/ : 63.0...65.0
1000 s: (60.5...67.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 105.0...115.0
1000 s: (102.0...118.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 325
Rack travel in mm : 7.40...7.60
Del.quantity cm3/ : 8.0...14.0
1000 s: (6.0...16.0)

Spread cm3 : 2.50
1000 s: (4.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 p
Edition : 01.02.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 866 153

Injection pump
Pump designation : PES6A1000320/3RS2763
EP type number : 0 410 806 006
Governor
Governor design. : RSV400...950A0C2238-1R
Governor no. : 0 420 233 255

Customer-spec. information
Customer : C.D.C.

Engine : 6CT 8.3

1st version kW : 145.0
Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 950

Rack travel in mm : 12.40...12.50

Del.quantity cm3/ : 12.2...12.4

100 s: (12.0...12.6)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 6.9...7.1

Del.quantity cm3/ : 3.2...3.6

100 s: (3.0...3.8)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 950

Aneroid pressure h: 900

Del.quantity : 122.0...124.0

1000 : (120.0...126.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 36...44

Testing:

1st rack travel in: 11.40
Speed rpm : 990...1000
3rd rack travel in: 4.00
Speed rpm : 1055...1085
4th rack travel in: 1150
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 6.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 6.90...7.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.40...12.50

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.60...10.80
2nd pressure hPa : 220
Rack travel in m: 11.10...11.20
3rd pressure hPa : 340
Rack travel in m: 11.90...12.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 86.0...90.0
1000 s: (84.0...92.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.90...7.10
Del.quantity cm³/ : 32.5...36.5
1000 s: (30.5...38.5)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3917577

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 L11
 Edition : 01.02.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 155
 Injection pump
 Pump designation : PES6A100D320/3RS2763
 EP type number : 0 410 806 006
 Governor
 Governor design. : RSV400...1000A0C2190
 -46R
 Governor no. : 0 420 233 257

Customer-spec. information
 Customer : C.D.C.

Engine : 6CT 8.3

1st version kW : 136.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.20...11.30

Del.quantity cm3/ : 10.7...10.9

100 s: (10.5...11.1)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 1.1...1.5

100 s: (0.9...1.8)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 107.0...109.0

1000 : (105.0...111.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 39...47

Testing:

1st rack travel in: 11.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1095...1125
3rd rack travel in: 4.00
Speed rpm : 1100...1130
4th rack travel in: 12.00
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 4.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.30...5.50

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.20...11.30
2nd speed rpm : 750
Rack travel in m: 12.00...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 118.0...122.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.30...5.50
Del.quantity cm³/ : 11.5...15.5
1000 s: (9.0...18.0)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3916719

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VMA 6,0 a
Edition : 02.01.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 156

Injection pump
Pump designation : PES6A90D320/3RS2785
EP type number : 0 410 896 088
Governor
Governor design. : RSV350...1300A2C2242
R
Governor no. : 0 420 233 259

Customer spec. information
Customer : VM

Engine : SUN 6105 ,...T

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.95...3.05
 : (2.90...3.10)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 12.00...12.10

Del. quantity cm3/ : 9.4...9.5
100 s : (9.2...9.7)

Spread cm3 : 0.3
100 s : (0.5)

2nd speed rpm : 350.0
Rack travel in mm : 7.4...7.6
Del. quantity cm3/ : 1.2...1.8
100 s : (1.0...2.0)
Spread cm3 : 0.2
100 s : (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1200
Del. quantity : 94.5...95.5
1000 : (92.5...97.5)
Spread cm3 : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 95...103

Testing:
1st rack travel in: 11.00
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1385...1415
3rd rack travel in: 4.00
Speed rpm : 1415...1445

4th rack travel in: 1580
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 64...72
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7.0

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 7.40...7.60
Rack travel in mm : 2.00
Speed rpm : 530...590

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 12.00...12.10
2nd speed rpm : 550
Rack travel in m: 12.00...12.10
5th speed rpm : 400
Rack travel in m: 13.20...13.80

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.00
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 105.0...115.0
1000 s: (102.0...118.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a74
Edition : 02.05.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 158

Injection pump
Pump designation : PES6A100D320/3RS2691
EP type number : 9 410 230 025
Governor
Governor design. : RSV400...1100AOC2190
-47R
Governor no. : 0 420 233 261

Customer-spec. information
Customer : C.D.C.

Engine : 6 C 8.3

1st version kW : 126.8
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 400.0
Rack travel in mm : 5.8...6.0
Del.quantity cm3/ : 1.6...2.0
100 s: (1.3...2.2)
Spread cm3 : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 96.5...98.5

1000 : (94.5...100.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 9.70
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 27...35
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.70...10.80
2nd speed rpm : 750
Rack travel in m: 12.30...12.50

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 119.5...123.5
1000 s: (117.5...125.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

: C.D.C. # 3918664

Adjust stop lever to 0.5...1.0 mm
before stop.

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 g 45
Edition : 05.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 866 159

Injection pump
Pump designation : PES6A85D410/3RS2761
EP type number : 0 410 886 895
Governor
Governor design. : RSV325...1400A2C2245

Governer no. : 0 420 232 537

Customer-spec. information
Customer : KHD

Engine : BF6L913T

1st version kW : 85.0
Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 9.70...9.80

Del.quantity cm3/ : 6.2...6.3

100 s: (6.0...6.5)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0

Rack travel in mm : 8.0...8.2

Del.quantity cm3/ : 1.3...1.9

100 s: (1.1...2.1)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del.quantity : 62.5...63.5

1000 : (60.5...65.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 95...103

Testing:

1st rack travel in: 8.70

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1265...1295

3rd rack travel in: 4.00

Speed rpm : 1285...1315
4th rack travel in: 1445
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 64...72
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 6.60...6.80
Rack travel in mm : 2.00
Speed rpm : 420...480

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 9.70...9.80
2nd speed rpm : 500
Rack travel in m: 10.40...10.50
4th speed rpm : 985
Rack travel in m: 10.00...10.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800
Del.quantity cm³/ : 57.0...59.0
1000 s: (54.5...61.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.70
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 17.80...18.20

Remarks:

: TM 2

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a77
 Edition : 06.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 160
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV470...1100AOC2190
 -48R
 Governor no. : 0 420 233 262

Customer-spec. information
 Customer : C.D.C.

Engine : 6CT830

1st version kW : 150.6
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 11.4...11.6

100 s: (11.2...11.8)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 470.0

Rack travel in mm : 5.7...5.9

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 114.0...116.0

1000 : (112.0...118.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 48...56

Testing:

1st rack travel in: 11.10
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1205...1235
3rd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 29...37
Setting point w/out bumper spring
Speed rpm : 470
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 470
Rack travel in mm : 5.70...5.90

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.10...12.20
2nd speed rpm : 750
Rack travel in m: 12.40...12.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 116.0...120.0
1000 s: (114.0...122.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 125.0...145.0
1000 s: (120.0...150.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 470
Rack travel in mm : 5.70...5.90
Del.quantity cm³/ : 16.0...20.0
1000 s: (13.5...22.5)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3917962

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM 8,3 a78
 Edition : 02.05.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 866 161
 Injection pump
 Pump designation : PES6A100D320/3RS2691
 EP type number : 9 410 230 025
 Governor
 Governor design. : RSV400...1000AOC2190
 -49R
 Governor no. : 0 420 233 263

Customer-spec. information
 Customer : C.D.C.

Engine : 6 CT 8.3

1st version kW : 151.4
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 047

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 017

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 11.9...12.1

100 s: (11.7...12.3)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0
 Rack travel in mm : 5.6...5.8
 Del.quantity cm3/ : 1.6...2.0
 100 s: (1.3...2.2)
 Spread cm3 : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del.quantity : 119.0...121.0
 1000 : (117.0...123.0)
 Spread cm3 : 4.00
 1000 : (6.50)

RATED SPEED

1st version
 Control lever
 position degrees: 34...42

Testing:

1st rack travel in: 11.10
Speed rpm : 1050...1060
2nd rack travel in: 4.00
Speed rpm : 1100...1130
3rd rack travel in: 4.00
Speed rpm : 1105...1135
4th rack travel in: 1175
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.60...5.80

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.10
Speed rpm : 1050...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.60...5.80
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3915963

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 3,0 g
Edition : 19.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 873 038

Injection pump
Pump designation : PES3A80D410RS2790
EP type number : 0 410 883 011
Governor
Governor design. : RSV325...900A7C602-1
L
Governor no. : 0 420 232 388

Customer-spec. information
Customer : KHD

Engine : F3L912/W

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00x2.00x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)
Rack travel in mm : 9.00...12.00
Firing order : 1- 3- 2

Phasing : 0-120-240

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 10.50...10.60

Del.quantity cm3/ : 5.1...5.2

100 s: (5.0...5.4)

Spread cm3 : 0.2

100 s: (0.4)

2nd speed rpm : 325.0

Rack travel in mm : 7.6...7.8

Del.quantity cm3/ : 0.7...1.3

100 s: (0.5...1.4)

Spread cm3 : 0.2

100 s: (0.3)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 51.5...52.5

1000 : (50.0...54.0)

Spread cm3 : 2.50

1000 : (4.00)

RATED SPEED

1st version

Control lever

position degrees: 98...106

Testing:

1st rack travel in: 9.50

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 955...985

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 315...375

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 900
Rack travel in m: 10.50...10.60
2nd speed rpm : 500
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm3/ : 45.5...47.5
1000 s: (43.5...49.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.50
Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : STE 3,4 a 1
 Edition : 27.10.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 874 247
 Injection pump
 Pump designation : PES4A85D410RS2746
 EP type number : 0 410 884 946
 Governor
 Governor design. : RSV300...1100A1C2227
 Governor no. : 0 420 232 491

Customer-spec. information
 Customer : STEYR

Engine : WD408.45

1st version kW : 46.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00x2.00x600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.85...2.95
 : (2.80...3.00)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 8.60...8.70

Del.quantity cm3/ : 5.0...5.1

100 s: (4.8...5.3)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 300.0

Rack travel in mm : 6.1...6.3

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.7)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del.quantity : 50.5...51.5

1000 : (48.5...53.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 105...113

Testing:

1st rack travel in: 7.60

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1145...1175
3rd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1420
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 67...75
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 5.60...5.80
Rack travel in mm : 2.00
Speed rpm : 430...490

TORQUE CONTROL

Dimension a mm : 0.85
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 8.60...8.70
2nd speed rpm : 500
Rack travel in m: 9.40...9.50
4th speed rpm : 915
Rack travel in m: 9.00...9.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm³/ : 47.0...49.0
1000 s: (44.5...51.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.60
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 90.0...100.0
1000 s: (87.0...103.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

D06

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : STE 3,4 a 2
 Edition : 01.02.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 874 247
 Injection pump
 Pump designation : PES4A85D410RS2746
 EP type number : 0 410 884 946
 Governor
 Governor design. : RSV300...1200A1C2227
 L
 Governor no. : 0 420 232 525

Customer-spec. information
 Customer : STEYR

Engine : WD408.45

1st version kW : 46.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.85...2.95
 : (2.80...3.00)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 8.60...8.70

Del.quantity cm3/ : 5.0...5.1

100 s: (4.8...5.3)

Spread cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 300.0

Rack travel in mm : 6.1...6.3

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.7)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del.quantity : 50.5...51.5

1000 : (48.5...53.5)

Spread cm3 : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 105...113

Testing:

1st rack travel in: 7.60

Speed rpm : 1240...1250

2nd rack travel in: 4.00

Speed rpm : 1245...1275
3rd rack travel in: 4.00
Speed rpm : 1255...1285
4th rack travel in: 1420
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 67...75
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.2

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 300
Rack travel in mm : 5.60...5.80
Rack travel in mm : 2.00
Speed rpm : 430...490

TORQUE CONTROL

Dimension a mm : 0.85
Torque control curve - 1st version
1st speed rpm : 1200
Rack travel in m: 8.60...8.70
2nd speed rpm : 500
Rack travel in m: 9.40...9.50
4th speed rpm : 915
Rack travel in m: 9.00...9.10

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500

Measurement

Speed 1/min : 500

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 47.0...49.0
1000 s: (44.5...51.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.60
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

D08

Speed rpm : 100
Del.quantity cm3/ : 90.0...100.0
1000 s: (87.0...103.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 4,0 e 1
 Edition : 02.01.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 874 248
 Injection pump
 Pump designation : PES4A90D410RS2728
 EP type number : 0 410 894 030
 Governor
 Governor design. : RSV350...750AOC2240-1L
 Governor no. : 0 420 232 535

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM364

1st version kW : 39.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness : 6.00X1.50X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.00...12.10

Del.quantity cm³/ : 5.7...5.9

100 s: (5.5...6.1)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 350.0

Rack travel in mm : 6.9...7.1

Del.quantity cm³/ : 1.0...1.4

100 s: (0.8...1.6)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.10

Governor spring pre-tension

Click setting x : 2.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 57.0...59.0

1000 : (55.0...61.0)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 76...84

Testing:

1st rack travel in: 11.00

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 780...793

4th rack travel in: 850

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 62...70

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 7.0

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 350

Rack travel in mm : 6.90...7.10

Rack travel in mm: 2.00

Speed rpm : 375...405

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 78.0...88.0

1000 s: (75.0...91.0)

Rack travel in mm : 16.50...16.90

Remarks:

:

Observe VDT-I-420/120

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 o 6
 Edition : 15.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 192
 Injection pump
 Pump designation : PES6A90D410RS2293
 EP type number : 0 410 896 031
 Governor
 Governor design. : RSV575...1250A1C618L
 Governor no. : 0 420 232 407

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 352

1st version kW : 88.3
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
 : (2.10...2.30)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1230

Rack travel in mm : 10.50...10.60

Del.quantity cm3/ : 6.1...6.2

100 s: (5.9...6.4)

Spread cm3 : 0.3

100 s: (0.4)

2nd speed rpm : 575.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1230

Del.quantity : 61.0...62.0

1000 : (59.0...64.0)

Spread cm3 : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 9.50

Speed rpm : 1250...1260

2nd rack travel in: 4.00

Speed rpm : 1275...1295

4th rack travel in: 1350

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 24...32

Setting point w/out bumper spring

Speed rpm : 575

Rack travel in mm : 6.5

Testing:

Speed rpm : 100

Minimum rack travel: 19.00

Speed rpm : 575

Rack travel in mm : 6.40...6.60

Rack travel in mm : 2.00

Speed rpm : 605...635

Speed rpm : 650

Maximum rack travel: 1.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 78.0...88.0

1000 s: (75.0...91.0)

Remarks:

:

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 o 5
Edition : 15.03.90
Replaces : 2.6.89
Test oil : ISO-4113

Combination no. : 0 400 876 195

Injection pump
Pump designation : PES6A90D410RS2293Z
EP type number : 0 410 896 037
Governor
Governor design. : RSV750...1250A1C618-
1L
Governor no. : 0 420 232 513

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM352A

1st version kW : 107.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
: (2.10...2.30)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1230

Rack travel in mm : 11.20...11.30

Del.quantity cm³/ : 7.4...7.5

100 s: (7.2...7.7)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 750.0

Rack travel in mm : 5.5...5.7

Del.quantity cm³/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1230

Del.quantity : 74.5...75.5

1000 : (72.5...77.5)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 111...119

Testing:

1st rack travel in: 10.20

Speed rpm : 1260...1270

2nd rack travel in: 4.00

Speed rpm : 1295...1315

4th rack travel in: 1350

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 86...94

Setting point w/out bumper spring

Speed rpm : 750

Rack travel in mm : 5.6

Speed rpm : 750

Rack travel in mm : 5.50...5.70

Rack travel in mm : 2.00

Speed rpm : 760...790

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 78.0...88.0

1000 s: (75.0...91.0)

Remarks:

:

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CAS 8,3 s
Edition : 14.02.1990
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 876 207

Injection pump
Pump designation : PES6A90D420LS2354
Governor
Governor design. : RSV375...1050A2B710D
R

Customer-spec. information
Customer : CASE

Engine : A-504 BDT

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 35...45

Inlet press., bar : 1.3

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 9 681 230 706

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.15...2.25
: (2.10...2.30)
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.5 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 9.00

Del.quantity cm³/ : 4.8...5.1

100 s : (-)

Spread cm³ : 0.5

100 s : (-)

2nd speed rpm : 1000

Rack travel in mm : 12.00

Del.quantity cm³/ : 8.6...9.4

100 s : (-)

3rd speed rpm : 200

Rack travel in mm : 6.00

Del.quantity cm³/ : 0.72...1.33

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 91.0...93.0

1000 : (-)

RATED SPEED

1st version

Control lever

position degrees: 36...44

Testing:

1st rack travel in: 12.20

Speed rpm : 1060...1080

2nd rack travel in: 8.70

Speed rpm : 1085...1115

3rd rack travel in: 4.50...6.20

Speed rpm : 1135...1165

4th rack travel in: 1250

Speed rpm : 0.30...1.00

LOW IDLE 1

Control lever

position degrees: 14...22

Setting point w/out bumper spring

Speed rpm : 375

Rack travel in mm : 7.80

Testing:

Speed rpm : 150

Minimum rack trave: 19.00

Speed rpm : 375

Rack travel in mm : 7.50...8.10
Rack travel in mm : 4.35
Speed rpm : 450
Speed rpm : 580
Maximum rack trave: 1.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: -
2nd speed rpm : 500
Rack travel in m: 0.10...0.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 91.0...95.0
1000 s: (-)
Speed rpm : 650
Del.quantity cm3/ : < 94.0
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: ?
Speed rpm : 1090...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 134.0...144.0
1000 s: (-)

HIGH IDLE

1st version

Speed rpm : 1150
Del.quantity cm3/ : 14.0...18.0
1000 s: (-)

LOW IDLE

Speed rpm : 375
Del.quantity cm3/ : 18.0...22.5
1000 s: (-)

Remarks:

: CASE # A66215

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 q 7
 Edition : 07.07.89
 Replaces : 9.3.87
 Test oil : ISO-4113
 Combination no. : 0 400 876 257
 Injection pump
 Pump designation : PES6A90D410RS2293Z
 EP type number : 0 410 896 037
 Governor
 Governor design. : RSV350...1300A0C1101
 -2L
 Governor no. : 0 420 232 411

Customer-spec. information
 Customer : DAIMLER-BENZ

Engine : OM 352

1st version kW : 69.9
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.00

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 003

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
 : (2.10...2.30)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 8.20...8.30

Del.quantity cm³/ : 4.4...4.5

100 s: (4.2...4.7)

Spread cm³ : 0.3

100 s: (0.4)

2nd speed rpm : 350.0

Rack travel in mm : 6.6...7.2

Del.quantity cm³/ : 1.0...1.2

100 s: (0.8...1.4)

Spread cm³ : 0.2

100 s: (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Del.quantity : 44.5...45.5

1000 : (42.5...47.5)

Spread cm³ : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 109...117

Testing:

1st rack travel in: 7.20

Speed rpm : 1340...1345

2nd rack travel in: 4.00

Speed rpm : 1364...1377

3rd rack travel in: 4.00

Speed rpm : 1390...1420
4th rack travel in: 1500
Speed rpm : 0.30...1.40
5th rack travel in: 1345...1355
Speed rpm : 7.20

LOW IDLE 1

Control lever
position degrees: -3
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 6.60...6.80
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1300
Rack travel in m: 8.20...8.30
2nd speed rpm : 500
Rack travel in m: 9.10...9.20
3rd speed rpm : 900
Rack travel in m: 8.90...9.10
4th speed rpm : 1075
Rack travel in m: 8.30...8.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 500
Del.quantity cm3/ : 39.0...42.0
1000 s: (36.5...44.5)
Speed rpm : 900
Del.quantity cm3/ : 48.0...50.0
1000 s: (45.5...52.5)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 78.0...88.0
1000 s: (75.0...91.0)

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.60...7.20
Del.quantity cm3/ : 10.0...12.0
1000 s: (8.0...14.0)
Spread cm3 : 2.00

Remarks:

APPLICATION

Unimog

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 6,1 e 6
 Edition : 13.12.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 274
 Injection pump
 Pump designation : PES6A95D410RS2471
 EP type number : 0 410 896 952
 Governor
 Governor design. : RSV325...1150A8C707-6L
 Governor no. : 0 420 232 532

Customer-spec. information
 Customer : KHD

Engine : BF6L913C

1st version kW : 132.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.80...11.90

Del.quantity cm³/ : 10.8...11.0

100 s: (10.6...11.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 325.0

Rack travel in mm : 7.2...7.4

Del.quantity cm³/ : 0.9...1.5

100 s: (0.6...1.7)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del.quantity : 108.0...110.0

1000 : (106.0...112.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 102...110

Testing:

1st rack travel in: 10.80

Speed rpm : 1190...1200

2nd rack travel in: 4.00

Speed rpm : 1235...1265

3rd rack travel in: 4.00
Speed rpm : 1285...1315
4th rack travel in: 1400
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 67...75
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.8

Testing:
Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 585...645

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.80...11.90
2nd speed rpm : 500
Rack travel in m: 11.80...12.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.80...11.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.90...10.00
2nd pressure hPa : 373
Rack travel in m: 11.50...11.60
3rd pressure hPa : 93
Rack travel in m: 10.10...10.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 850
Del.quantity cm³/ : 103.5...106.5
1000 s: (101.0...109.0)
1000 s: (7.)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 62.0...64.0
1000 s: (60.0...66.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.80
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.50...15.90

Remarks:

:

Test electrically-released starting
quantity (EES) with 12 volts

The stop position of the control rod
must be easily reached with the stop
lever

APPLICATION

Installation 2300

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 5,7 q 20
 Edition : 02.01.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 312
 Injection pump
 Pump designation : PES6A90D410RS2293-1
 EP type number : 0 410 896 077
 Governor
 Governor design. : RSV350...1400AOC745-
 1L
 Governor no. : 0 420 232 530

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 352 A

1st version kW : 115.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.15...2.25
 : (2.10...2.30)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1380

Rack travel in mm : 11.90...12.00

Del.quantity cm3/ : 7.5...7.6

100 s: (7.3...7.8)

Spread cm3 : 0.3

100 s: (0.4)

2nd speed rpm : 350.0

Rack travel in mm : 7.8...8.0

Del.quantity cm3/ : 0.9...1.5

100 s: (0.7...1.7)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1380

Del.quantity : 75.5...76.5

1000 : (73.5...78.5)

Spread cm3 : 3.00

1000 : (4.50)

RATED SPEED

1st version

Control lever

position degrees: 112...120

Testing:

1st rack travel in: 10.90

Speed rpm : 1420...1430

2nd rack travel in: 4.00

Speed rpm : 1510...1540

3rd rack travel in: 4.00

Speed rpm : 1530...1560
4th rack travel in: 1700
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 79...87
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7.4

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 350
Rack travel in mm : 7.80...8.00
Rack travel in mm : 2.00
Speed rpm : 550...610

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 64.0...67.0
1000 s: (61.5...69.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.90
Speed rpm : 1420...1430

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 88.0...98.0
1000 s: (85.0...101.0)
Rack travel in mm : 16.20...16.60

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 8,4 a
 Edition : 07.02.89
 Replaces : 9.10.87
 Test oil : ISO-4113
 Combination no. : 0 400 876 322
 Injection pump
 Pump designation : PES6A95D410RS2689
 EP type number : 0 410 896 916
 Governor
 Governor design. : RSV400...1000A1C2187
 L
 Governor no. : 0 420 232 387

Customer-spec. information
 Customer : LIEBHERR

Engine : D906 NA

1st version kW : 112.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40...45
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80
 : (2.65...2.85)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 4.00...5.00

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.40...10.50

Del. quantity cm³/ : 8.7...8.9

100 s: (8.5...9.1)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 400.0
 Rack travel in mm : 6.3...6.5
 Del. quantity cm³/ : 1.0...1.6
 100 s: (0.7...1.8)
 Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: 3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del. quantity : 87.0...89.0
 1000 : (85.0...91.0)
 Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 95...103

Testing:

1st rack travel in: 9.40
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1050...1080
3rd rack travel in: 4.00
Speed rpm : 1090...1120
4th rack travel in: 1230
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 400
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 530...590

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 10.40...10.50
2nd speed rpm : 500
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 77.5...80.5
1000 s: (75.0...83.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1040...1050

INTERMEDIATE RATED SPEED

Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 400
Rack travel in mm : 6.30...6.50
Del.quantity cm3/ : 10.0...16.0
1000 s: (7.5...18.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 3
 Edition : 12.04.90
 Replaces : 2.10.89
 Test oil : ISO-4113

Combination no. : 0 400 876 327

Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300AOC2195
 R
 Governor no. : 0 420 233 200

Customer-spec. information
 Customer : DAF

Engine : DNT 620

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 7.7...7.9

100 s: (7.5...8.1)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.5...6.7

Del.quantity cm3/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 700

Del.quantity : 77.0...79.0

1000 : (75.0...81.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 108...116

Testing:

1st rack travel in: 9.70
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1400...1430
3rd rack travel in: 4.00
Speed rpm : 1425...1455
4th rack travel in: 1580
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.50...6.70
Rack travel in mm : 2.00
Speed rpm : 600...660

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 10.70...10.80
2nd speed rpm : 500
Rack travel in m: 11.60...11.70
4th speed rpm : 1060
Rack travel in m: 11.00...11.20

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.60...11.70

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.10...11.30
2nd pressure hPa : 250
Rack travel in m: 11.50...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1290
Del.quantity cm3/ : 74.0...76.0
1000 s: (71.5...78.5)

Aneroid pressure h: -

Speed rpm : 600
Del.quantity cm3/ : 65.5...66.5
1000 s: (63.5...68.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...145.0
1000 s: (127.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 2
 Edition : 12.01.90
 Replaces : 8.9.89
 Test oil : ISO-4113
 Combination no. : 0 400 876 332
 Injection pump
 Pump designation : PES6A95D320RS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300A0C2206
 R
 Governor no. : 0 420 233 204

Customer-spec. information
 Customer : DAF

Engine : DNTD 620

1st version kW : 110.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 10.80...10.90

Del.quantity cm³/ : 6.5...6.7

100 s: (6.3...6.9)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.3...6.5

Del.quantity cm³/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Del.quantity : 65.0...67.0

1000 : (63.0...69.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 108...116

Testing:

1st rack travel in: 9.20
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1400...1430
3rd rack travel in: 4.00
Speed rpm : 1425...1455
4th rack travel in: 1570
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 76...84
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 590...650

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 10.20...10.40
2nd speed rpm : 500
Rack travel in m: 10.80...10.90
4th speed rpm : 1005
Rack travel in m: 10.50...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1290
Del.quantity cm³/ : 69.0...71.0
1000 s: (66.5...73.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...145.0
1000 s: (127.0...148.0)

Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.50
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 1
 Edition : 06.04.90
 Replaces : 29.3.89
 Test oil : ISO-4113
 Combination no. : 0 400 876 333
 Injection pump
 Pump designation : PES6A95D32ORS2693Z
 EP type number : 0 410 896 913
 Governor
 Governor design. : RSV300...1300AOC2195
 R
 Governor no. : 0 420 233 200

Customer-spec. information
 Customer : DAF

Engine : DNS 620

1st version kw : 150.0
 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)

Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 8.8...8.9

100 s: (8.6...9.1)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.3...6.5

Del.quantity cm3/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 700

Del.quantity : 88.5...89.5

1000 : (86.5...91.5)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever
position degrees: 104...112

Testing:

1st rack travel in: 10.70
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1410...1440
3rd rack travel in: 4.00
Speed rpm : 1440...1470
4th rack travel in: 1595
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.9

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 580...640

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 11.70...11.90
2nd speed rpm : 500
Rack travel in m: 12.10...12.20
4th speed rpm : 1020
Rack travel in m: 11.90...12.10

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 12.10...12.20

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.00...11.20
2nd pressure hPa : 290
Rack travel in m: 11.90...12.00
3rd pressure hPa : 250
Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1290
Del.quantity cm3/ : 88.0...90.0
1000 s: (85.5...92.5)
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 65.5...66.5
1000 s: (63.5...68.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...145.0
1000 s: (127.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.50
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 6
 Edition : 07.02.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 342
 Injection pump
 Pump designation : PES6A95D32ORS2693W
 EP type number : 0 410 896 907
 Governor
 Governor design. : RSV250...750A7C2206-1R
 Governor no. : 0 420 233 209

Customer-spec. information
 Customer : DAF

Engine : DNS 620

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.60...13.70

Del.quantity cm3/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.3...6.5

Del.quantity cm3/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 101.0...103.0

1000 : (99.0...105.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 90...98

LOW IDLE 1

Control lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.4
Speed rpm : 300
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 315...375

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.50
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 7
 Edition : 07.02.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 343
 Injection pump
 Pump designation : PES6A95D32ORS2693V
 EP type number : 0 410 896 908
 Governor
 Governor design. : RSV250...900A7C22G6-2R
 Governor no. : 0 420 233 208

Customer-spec. information
 Customer : DAF

Engine : DNS 620/1800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.60...13.70

Del.quantity cm³/ : 10.1...10.3

100 s: (9.9...10.5)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm : 6.3...6.5

Del.quantity cm³/ : 0.7...1.1

100 s: (0.4...1.3)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 101.0...103.0

1000 : (99.0...105.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 103...111

Testing:

1st rack travel in: 12.60
Speed rpm : 895...900
2nd rack travel in: 4.00
Speed rpm : 935...950
4th rack travel in: 1090
Speed rpm : 0.30...1.40

LOW IDLE 1
Control Lever
position degrees: 72...80
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.4

Testing:
Speed rpm : 100
Speed rpm : 300
Rack travel in mm : 6.30...6.50
Rack travel in mm : 2.00
Speed rpm : 315...375

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.30...6.50
Del.quantity cm³/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm³ : 3.50
1000 s: (5.50)

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 o 1
Edition : 01.02.90
Replaces : 18.8.89
Test oil : ISO-4113

Combination no. : 0 400 876 344

Injection pump
Pump designation : PES6A95D410RS2625
EP type number : 0 410 896 926
Governor
Governor design. : RSV325...1250A2C1159
Governor no. : 0 420 232 490

Customer-spec. information
Customer : KHD

Engine : BF6L913C

1st version kW : 130.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
: (1.85...2.05)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 9.3...9.5

100 s: (9.1...9.7)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 900

Del.quantity : 93.0...95.0

1000 : (91.0...97.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 92...100

Testing:

1st rack travel in: 10.60

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1320...1350

3rd rack travel in: 4.00
Speed rpm : 1370...1400
4th rack travel in: 1540
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 63...71
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 575...635

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.60...11.70
2nd speed rpm : 500
Rack travel in m: 12.00...12.10
4th speed rpm : 1105
Rack travel in m: 11.70...11.90

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.00...12.10

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.40...10.50
2nd pressure hPa : 550
Rack travel in m: 10.70...10.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 1000
Del.quantity cm³/ : 94.5...97.5
1000 s: (92.0...100.0)
Aneroid pressure h: 900
Speed rpm : 1150
Del.quantity cm³/ : 92.0...95.0
1000 s: (89.5...97.5)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 54.0...56.0
1000 s: (52.0...58.0)

RACK STOP ADJUSTMENT

Speed rpm : 500

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 17.10...17.30

Remarks:

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 5,9 c
 Edition : 30.03.90
 Replaces : 28.6.89
 Test oil : ISO-4113
 Combination no. : 0 400 876 349
 Injection pump
 Pump designation : PES6A90D410RS2757
 EP type number : 0 410 896 086
 Governor
 Governor design. : RSV425...1000A1C2233
 L
 Governor no. : 0 420 232 496

Customer-spec. information
 Customer : IVECO-FIAT

Engine : 8065.25.080

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness : 6.00X2.00X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
 : (2.20...2.40)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.80...11.90

Del.quantity cm³/ : 9.0...9.1

100 s: (8.8...9.3)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 475.0

Rack travel in mm : 7.1...7.3

Del.quantity cm³/ : 1.0...1.6

100 s: (0.8...1.8)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 800

Del.quantity : 90.0...91.0

1000 : (88.0...93.0)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 101...109

Testing:

1st rack travel in: 10.80

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1090...1120

3rd rack travel in: 4.00

Speed rpm : 1140...1170
4th rack travel in: 1240
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 77...85
Setting point w/out bumper spring
Speed rpm : 475
Rack travel in mm : 6.7

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 475
Rack travel in mm : 7.10...7.30
Rack travel in mm : 2.00
Speed rpm : 495...555

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.80...11.90
2nd speed rpm : 500
Rack travel in m: 11.80...12.00

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 11.30...11.50

Measurement

Speed 1/min : 500
2nd pressure hPa : 780
Rack travel in m: 11.70...11.80

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 85.0...95.0
1000 s: (82.0...98.0)
Rack travel in mm : 19.50...21.00

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 6,2 o 5
 Edition : 12.01.90
 Replaces : 2.10.89
 Test oil : ISO-4113

Combination no. : 0 400 876 356

Injection pump
 Pump designation : PES6A95D32ORS2693
 EP type number : 0 410 896 914
 Governor
 Governor design. : RSV300...1300AOC2195
 -1R
 Governor no. : 0 420 233 222

Customer-spec. information
 Customer : DAF

Engine : DNT 620

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
 : (1.95...2.15)
 Rack travel in mm : 7.50...10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 2.50...3.50

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 7.7...7.9

100 s: (7.5...8.1)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0
 Rack travel in mm : 6.5...6.7
 Del.quantity cm3/ : 0.7...1.1
 100 s: (0.4...1.3)
 Spread cm3 : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 850
 Aneroid pressure h: 700
 Del.quantity : 77.0...79.0
 1000 : (75.0...81.0)
 Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 106...114

Testing:

1st rack travel in: 9.70
Speed rpm : 1340...1350
2nd rack travel in: 4.00
Speed rpm : 1400...1430
3rd rack travel in: 4.00
Speed rpm : 1425...1455
4th rack travel in: 1580
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 6.1

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 300
Rack travel in mm : 6.50...6.70
Rack travel in mm : 2.00
Speed rpm : 600...660

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1290
Rack travel in m: 10.70...10.80
2nd speed rpm : 500
Rack travel in m: 11.60...11.70
4th speed rpm : 1060
Rack travel in m: 11.00...11.20

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.60...11.70

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.10...11.30
2nd pressure hPa : 250
Rack travel in m: 11.50...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1290
Del.quantity cm3/ : 74.0...76.0
1000 s: (71.5...78.5)

Aneroid pressure h: -

Speed rpm : 600
Del.quantity cm3/ : 65.5...66.5
1000 s: (63.5...68.5)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...145.0
1000 s: (127.0...148.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 300
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 7.0...11.0
1000 s: (4.5...13.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 d 2
Edition : 06.03.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 876 360

Injection pump
Pump designation : PES6A100D410RS2762
EP type number : 0 410 806 003
Governor
Governor design. : RSV425...1100A2C2225
Governor no. : 9 420 234 176

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076ARW-06

1st version kW : 146.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 11.4...11.6

100 s: (11.2...11.8)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.8...2.2
100 s: (1.5...2.4)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 900

Del.quantity : 114.0...116.0

1000 : (112.0...118.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 40...48

Testing:

1st rack travel in: 10.80
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1205...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control Lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 425
Rack travel in mm : 4.5

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 425
Rack travel in mm : 4.90...5.10

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.80...11.90
2nd speed rpm : 650
Rack travel in m: 13.70...13.90

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.70...13.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.70...11.90
2nd pressure hPa : 535
Rack travel in m: 12.30...12.40
3rd pressure hPa : 720
Rack travel in m: 13.30...13.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 650
Del.quantity cm3/ : 147.5...150.5
1000 s: (145.0...153.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 129.0...133.0
1000 s: (126.0...136.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.80
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 4.90...5.10
Del.quantity cm3/ : 18.0...22.0
1000 s: (15.5...24.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE29298

Adjustment without torque-control
spring retainer with 1 mm less
control-rod travel. Increase in
full-load delivery with torque-control
spring retainer.

Start-of-delivery mark = 13,5° after
start of delivery cyl. 1.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 d 3
Edition : 06.03.90
Replaces : 2.5.89
Test oil : ISO-4113

Combination no. : 0 400 876 361

Injection pump
Pump designation : PES6A100D410RS2762
EP type number : 0 410 806 003
Governor
Governor design. : RSV400...1100A2C2204
-4L
Governor no. : 0 420 232 500

Customer-spec. information
Customer : JOHN DEERE

Engine : 6076 ADW-01

1st version kW : 146.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05
: (2.90...3.10)
Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.60...11.70

Del.quantity cm3/ : 11.2...11.4

100 s: (11.0...11.6)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0
Rack travel in mm : 5.8...6.0
Del.quantity cm3/ : 3.1...3.5
100 s: (2.8...3.7)
Spread cm3 : 0.6
100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del.quantity : 112.0...114.0
1000 : (110.0...116.0)
Spread cm3 : 4.00
1000 : (6.50)

RATED SPEED

1st version
Control lever
position degrees: 40...48

Testing:

1st rack travel in: 10.60
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1210...1220
3rd rack travel in: 4.00
Speed rpm : 1220...1250
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 16...24
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.60...11.70

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 100.0...120.0
1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 31.0...35.0
1000 s: (28.5...37.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE35847

Start-of-delivery mark = 13,5° after
start of delivery cyl. 1.

Starting/full-load transition speed
from holding magnet = 450 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 e
Edition : 06.03.90
Replaces : 7.4.89
Test oil : ISO-4113

Combination no. : 0 400 876 362

Injection pump
Pump designation : PES6A100D410RS2764
EP type number : 0 410 806 004
Governor
Governor design. : RSV600...1100A2C2161
-6L
Governor no. : 0 420 232 505

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466 AZ

1st version kW : 152.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55
: (2.40...2.60)

Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 12.9...13.1

100 s: (12.7...13.3)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 600.0

Rack travel in mm : 5.6...5.8

Del.quantity cm3/ : 1.4...1.8

100 s: (1.1...2.0)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 900

Del.quantity : 129.5...131.5

1000 : (127.5...133.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 37...45

Testing:

1st rack travel in: 11.50

Speed rpm : 1145...1155

2nd rack travel in: 4.00
Speed rpm : 1195...1205
3rd rack travel in: 4.00
Speed rpm : 1215...1245
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 600
Rack travel in mm : 5.2

Testing:
Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 600
Rack travel in mm : 5.60...5.80

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.50...12.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.00...9.20
2nd pressure hPa : 175
Rack travel in m: 10.10...10.20
3rd pressure hPa : 285
Rack travel in m: 11.80...12.20

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 68.5...72.5
1000 s: (65.5...75.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack travel: 11.50
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 180.0...200.0
1000 s: (175.0...205.0)

LOW IDLE

Speed rpm : 600
Rack travel in mm : 5.60...5.80
Del.quantity cm³/ : 14.0...18.0
1000 s: (11.5...20.5)
Spread cm³ : 6.00
1000 s: (8.00)

Remarks:
: JOHN DEERE # RE35281

Start-of-delivery mark at control-rod
travel 10.5 mm and 15° after start of
delivery.

Starting/full-load transition speed
from holding magnet = 450 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,7 f
Edition : 06.03.90
Replaces : 28.9.89
Test oil : ISO-4113

Combination no. : 0 400 876 363

Injection pump
Pump designation : PES6A100D410RS2765
EP type number : 0 410 806 005
Governor
Governor design. : RSV400...1100A2C2204
-5L
Governor no. : 0 420 232 506

Customer-spec. information
Customer : JOHN DEERE

Engine : 6466AT-01

1st version kW : 125.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 457 413 010

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55
: (2.40...2.60)

Rack travel in mm : 10.50
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 10.90...11.00

Del.quantity cm3/ : 11.0...11.2

100 s: (10.8...11.4)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 110.0...112.0

1000 : (108.0...114.0)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 9.90

Speed rpm : 1145...1155

2nd rack travel in: 4.00

Speed rpm : 1220...1230
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 17...25
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.90...6.10

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.90...11.00
2nd speed rpm : 700
Rack travel in m: 11.40...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 114.5...117.5
1000 s: (112.0...120.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.90
Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (175.0...205.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE35282

Start-of-delivery mark 11° cam angle
after start of delivery cyl. 1

Start-of-delivery mark at control-rod
travel 10.5 mm and 15° after start of
delivery.

Starting/full-load transition speed
from holding magnet = 450 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 c 7
Edition : 23.03.90
Replaces : 7.7.89
Test oil : ISO-4113
Combination no. : 0 400 876 367
Injection pump
Pump designation : PES6A90D410RS2710-1
EP type number : 0 410 896 084
Governor
Governor design. : RSV350...750A0C2240L
Governor no. : 0 420 232 527

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 366

1st version kW : 60.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42
Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 700
Rack travel in mm : 12.20...12.30
Del.quantity cm3/ : 6.4...6.5
100 s: (6.2...6.7)
Spread cm3 : 0.3
100 s: (0.5)

2nd speed rpm : 350.0
Rack travel in mm : 8.2...8.4
Del.quantity cm3/ : 0.6...1.2
100 s: (0.4...1.4)
Spread cm3 : 0.2
100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -
Speed rpm : 600
Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del.quantity : 64.0...65.0
1000 : (62.0...67.0)
Spread cm3 : 3.00
1000 : (5.00)

RATED SPEED

1st version
Control lever
position degrees: 82...90

Testing:
1st rack travel in: 11.20
Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 780...793
4th rack travel in: 900
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 8.2

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 350
Rack travel in mm : 8.10...8.30
Rack travel in mm : 2.00
Speed rpm : 380...420

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 78.0...88.0
1000 s: (75.0...91.0)
Rack travel in mm : 16.50...16.90

Remarks:

:

Observe VDT-I-420/120

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 1 o 4
 Edition : 01.12.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 368
 Injection pump
 Pump designation : PES6A95D410RS2625
 EP type number : 0 410 896 926
 Governor
 Governor design. : RSV325...1250A2C2205
 -2L
 Governor no. : 0 420 232 531

Customer-spec. information
 Customer : KHD

Engine : BF6L913C

1st version kW : 131.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.90...2.00
 : (1.85...2.05)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250

Rack travel in mm : 11.60...11.70

Del.quantity cm³/ : 9.6...9.8

100 s: (9.4...10.0)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 325.0

Rack travel in mm : 6.4...6.6

Del.quantity cm³/ : 1.0...1.6

100 s: (0.7...1.8)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1250

Aneroid pressure h: 900

Del.quantity : 96.0...98.0

1000 : (94.0...100.0)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 93...101

Testing:

1st rack travel in: 10.60

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1330...1360

3rd rack travel in: 4.00
Speed rpm : 1380...1410
4th rack travel in: 1545
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 63...71
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 325
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 560...620

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1250
Rack travel in m: 11.60...11.70
2nd speed rpm : 500
Rack travel in m: 11.60...11.80

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.60...11.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.00...10.10
2nd pressure hPa : 330
Rack travel in m: 11.20...11.30
3rd pressure hPa : 160
Rack travel in m: 10.60...10.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 850
Del.quantity cm³/ : 91.5...94.5
1000 s: (89.0...97.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 58.0...60.0
1000 s: (56.0...62.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.60
Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 120.0...130.0
1000 s: (117.0...133.0)
Rack travel in mm : 15.80...16.20

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 6,0 c 8
Edition : 19.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 400 876 370

Injection pump
Pump designation : PES6A90D410RS2710
EP type number : 0 410 896 082
Governor
Governor design. : RSV750..1250A0C2006-
6L
Governor no. : 0 420 232 534

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM 366

1st version kW : 92.0
Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 000

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.25...2.35
: (2.20...2.40)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1230

Rack travel in mm : 11.40...11.50

Del.quantity cm³/ : 6.8...6.9

100 s: (6.6...7.1)

Spread cm³ : 0.3

100 s: (0.5)

2nd speed rpm : 750.0

Rack travel in mm : 6.5...6.7

Del.quantity cm³/ : 1.4...2.0

100 s: (1.2...2.2)

Spread cm³ : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 2.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1230

Del.quantity : 68.5...69.5

1000 : (66.5...71.5)

Spread cm³ : 3.00

1000 : (5.00)

RATED SPEED

1st version

Control lever

position degrees: 95...103

Testing:

1st rack travel in: 10.40

Speed rpm : 1270...1280

2nd rack travel in: 4.00

Speed rpm : 1316...1333

4th rack travel in: 1425

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 78...86

Setting point w/out bumper spring

Speed rpm : 750

Rack travel in mm : 6.6

Testing:

Speed rpm : 100

Minimum rack trave: 19.50

Speed rpm : 750

Rack travel in mm : 6.50...6.70

Rack travel in mm : 2.00

Speed rpm : 760...820

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750

Del.quantity cm³/ : 52.0...54.0

1000 s: (49.5...56.5)

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 78.0...88.0

1000 s: (75.0...91.0)

Rack travel in mm : 17.00...17.40

Remarks:

:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DEE 7,6 h15
 Edition : 02.05.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 400 876 371
 Injection pump
 Pump designation : PES6A100D410RS2676-1
 EP type number : 9 410 230 024
 Governor
 Governor design. : RSV450...1050AOC2204
 -6L
 Governor no. : 0 420 232 539
 Customer-spec. information
 Customer : JOHN DEERE
 Engine : 6466AT13
 1st version kW : 120.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 457 413 010
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 101
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,6
 Test lines : 1 680 750 008
 Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55
 : (2.40...2.60)
 Rack travel in mm : 10.50
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050
 Rack travel in mm : 10.10...10.20
 Del.quantity cm³/ : 10.1...10.3
 100 s: (9.9...10.5)
 Spread cm³ : 0.4
 100 s: (0.6)
 2nd speed rpm : 450.0
 Rack travel in mm : 5.4...5.6
 Del.quantity cm³/ : 1.7...2.1
 100 s: (1.5...2.3)
 Spread cm³ : 0.6
 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1050
 Del.quantity : 101.5...103.5
 1000 : (99.5...105.5)
 Spread cm³ : 4.00
 1000 : (6.50)

RATED SPEED

1st version
 Control lever
 position degrees: 35...43

Testing:

1st rack travel in: 9.10
Speed rpm : 1095...1105
2nd rack travel in: 4.00
Speed rpm : 1180...1190
3rd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 5.0

Testing:

Speed rpm : 100
Minimum rack travel: 19.00
Speed rpm : 450
Rack travel in mm : 5.40...5.60

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 10.10...10.20
2nd speed rpm : 650
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650
Del.quantity cm³/ : 112.0...116.0
1000 s: (110.0...118.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1095...1105

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 190.0...210.0
1000 s: (185.0...215.0)

LOW IDLE

Speed rpm : 450
Rack travel in mm : 5.40...5.60
Del.quantity cm³/ : 17.5...21.5
1000 s: (15.5...23.5)

Spread cm³ : 6.00
1000 s: (8.00)

Remarks:

: JOHN DEERE # RE44344
Start-of-delivery mark at control-rod
travel 10.5 mm and 15° after start of
delivery.

Starting/full-load transition speed
from holding magnet = 450 1/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : HAN 10,8 f7
 Edition : 24.02.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 076 008
 Injection pump
 Pump designation : PE6A100D32ORS3030-1
 EP type number : 0 411 006 019
 Governor
 Governor design. : RSV350...700AOC2228R
 Governor no. : 0 420 233 214

Customer-spec. information
 Customer : HANOMAG

Engine : D963A2/G

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 000
 Inlet press., bar : 1.00
 Test nozzle holder
 assembly : 0 681 343 009
 Opening
 pressure, bar : 172...175

Test lines : 1 680 750 003

Outside diameter
 x Wall thickness
 x Length mm : 6.00X2.00X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27
 Prestroke mm : 1.80...1.90
 : (1.75...1.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 8.50...9.50
 & maximum rack tra: 21.00
 Difference ° CS : 5.50...6.50

BASIC SETTING

1st speed rpm : 700
 Rack travel in mm : 11.00...11.10
 Del. quantity cm3/ : 16.4...16.6
 100 s: (16.2...16.8)
 Spread cm3 : 0.3
 100 s: (0.6)
 2nd speed rpm : 350.0
 Rack travel in mm : 5.9...6.1

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del. quantity : 164.0...166.0
 1000 : (162.0...168.0)
 Spread cm3 : 3.50
 1000 : (6.00)

RATED SPEED

1st version
 Control lever
 position degrees: 85...93

Testing:
 1st rack travel in: 10.00
 Speed rpm : 740...750
 2nd rack travel in: 4.00
 Speed rpm : 825...855
 4th rack travel in: 980

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 74...82

Setting point w/out bumper spring

Speed rpm : 350

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack travel: 19.50

Speed rpm : 350

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 375...435

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 700

Rack travel in m: 11.00...11.10

2nd speed rpm : 500

Rack travel in m: 11.00...11.20

5th speed rpm : 370

Rack travel in m: 12.20...12.80

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00

Speed rpm : 740...750

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 215.0...225.0
1000 s: (212.0...228.0)

Rack travel in mm : 19.50...21.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : BAO 31,8 d1
 Edition : 02.01.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 830 714
 Injection pump
 Pump designation : PE12P130A12ORS3127
 EP type number : 0 411 830 704
 Governor
 Governor design. : RQV400...750PA934
 Governor no. : 0 421 813 816

Customer-spec. information
 Customer : BAUDOUIN

Engine : 12 P 15-2

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 074

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 12- 9- 4- 5- 8-
 11- 2- 3- 10- 7- 6

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.60...12.70

Del.quantity cm3/ : 30.7...31.0

100 s: (30.3...31.3)

Spread cm3 : 0.6

100 s: (1.0)

2nd speed rpm : 400.0

Rack travel in mm : 4.7...5.1

Del.quantity cm3/ : 2.1...2.7

100 s: (1.7...3.1)

Spread cm3 : 1.0

100 s: (1.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 375

travel mm : 0.50...0.70

2nd speed rpm : 450

travel mm : 2.00...2.10

3rd speed rpm : 650

travel mm : 2.00...2.10

4th speed rpm : 750

travel mm : 3.30...5.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 307.0...310.0

1000 : (303.5...313.5)

Spread cm3 : 6.00

1000 : (10.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 11.60
Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 776...789
4th rack travel in: 900
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 2...10

Testing:
Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 400
Rack travel in mm : 4.80...5.00
Rack travel in mm : 2.00

START CUT-OUT

Speed 1/min : 340 (360)

Remarks:
:

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : BAO 31,8 d
 Edition : 02.01.90
 Replaces : 2.10.89
 Test oil : ISO-4113
 Combination no. : 0 401 830 715
 Injection pump
 Pump designation : PE12P130A12ORS3127
 EP type number : 0 411 830 704
 Governor
 Governor design. : RQV350...900PA934-2
 Governor no. : 0 421 813 818

Customer-spec. information
 Customer : BAUDOUIN

Engine : 12 P 15-2

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 074

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 12- 9- 4- 5- 8-
 11- 2- 3- 10- 7- 6

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 12.90...13.00

Del.quantity cm3/ : 30.9...31.2

100 s: (30.4...31.6)

Spread cm3 : 0.6

100 s: (1.0)

2nd speed rpm : 350.0

Rack travel in mm : 5.2...5.6

Del.quantity cm3/ : 2.0...2.6

100 s: (1.6...3.0)

Spread cm3 : 1.0

100 s: (1.4)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325

travel mm : 1.10...1.30

2nd speed rpm : 500

travel mm : 3.10...3.80

3rd speed rpm : 750

travel mm : 6.00...6.40

4th speed rpm : 900

travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 940

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 900

Del.quantity : 309.0...312.0

1000 : (304.0...316.0)

Spread cm3 : 6.00

1000 : (10.00)

RATED SPEED

1st version

Control lever

position degrees: 58...66

Testing:

1st rack travel in: 11.90

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 1005...1035

4th rack travel in: 1150

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 26...34

Testing:

Speed rpm : 100

Minimum rack travel: 6.90

Speed rpm : 350

Rack travel in mm : 5.30...5.50

CONSTANT REGULATION

Speed rpm : 350...450

START CUT-OUT

Speed 1/min : 270 (290)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90

Speed rpm : 940...950

Remarks:

:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 20,9 d2
Edition : 05.08.88
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 840 095

Injection pump
Pump designation : PE12P110A520LS839-1
EP type number : 0 411 810 043
Governor
Governor design. : RQV250...1150PA670
Governor no. : 0 421 813 387

Customer-spec. information
Customer : MAN

Engine : D2542 MTE

1st version kW : 386.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.30...12.40

Del.quantity cm3/ : 14.2...14.5

100 s: (13.9...14.7)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.8...7.0

Del.quantity cm3/ : 1.4...1.9

100 s: (1.1...2.1)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.20...1.30

2nd speed rpm : 550
travel mm : 3.50...4.00

3rd speed rpm : 950
travel mm : 6.60...6.90

4th speed rpm : 1150
travel mm : 8.20...8.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1170

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del.quantity : 142.0...145.0

1000 : (139.5...147.5)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 11.30
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1295...1325
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack travel: 8.40
Speed rpm : 250
Rack travel in mm : 6.80...7.00

CONSTANT REGULATION
Speed rpm : 290...395

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 12.30...12.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.50...10.60
2nd pressure hPa : 280
Rack travel in m: 11.80...11.90
3rd pressure hPa : 180
Rack travel in m: 10.90...11.10

START CUT-OUT

Speed 1/min : 200 (220)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500

Del.quantity cm³/ : 98.0...101.0
1000 s: (95.5...103.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.30
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.80...7.00
Del.quantity cm³/ : 14.0...19.0
1000 s: (11.5...21.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 20,9 z
 Edition : 07.04.89
 Replaces : 16.5.88
 Test oil : ISO-4113
 Combination no. : 0 401 840 108
 Injection pump
 Pump designation : PE12P110A520/4LS849
 EP type number : 0 411 810 041
 Governor
 Governor design. : RGV250...1050PA889
 Governor no. : 0 421 813 696

Customer-spec. information
 Customer : MAN

Engine : D2842ME

1st version kW : 305.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)
 Rack travel in mm : 9.00...12.00

Firing order : 12- 1- 5- 9- 8- 3-
 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 180-225-240-285-300-
 345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 10.40...10.50

Del.quantity cm³/ : 12.8...13.1

100 s: (12.6...13.4)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.5...5.7

Del.quantity cm³/ : 1.5...2.0

100 s: (1.2...2.2)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 0.90...1.30

2nd speed rpm : 800

travel mm : 5.30...5.70

3rd speed rpm : 1050

travel mm : 7.50...7.70

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1125

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 128.5...131.5

1000 : (126.0...134.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 113...121

Testing:
1st rack travel in: 9.40
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 63...71

Testing:
Speed rpm : 100
Minimum rack travel: 7.10
Speed rpm : 250
Rack travel in mm : 5.50...5.70

CONSTANT REGULATION
Speed rpm : 385...510

START CUT-OUT

Speed 1/min : 190 (210)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1090...1100

Remarks:
: MAN-NR. 2-7905

APPLICATION

Rail car

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 21,9 k
Edition : 12.11.87
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 401 840 742

Injection pump
Pump designation : PE12P120A320LS3836-1
EP type number : 0 411 820 718
Governor
Governor design. : RQV350...1150PA493-3
Governor no. : 0 421 813 422

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM 424 LA

1st version kW : 452.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 150...170

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.10...12.20

Del.quantity cm3/ : 18.0...18.2

100 s: (17.7...18.5)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 350.0
Rack travel in mm : 5.0...5.2
Del.quantity cm3/ : 1.4...2.0
100 s: (1.1...2.3)

Spread cm3 : 0.8
100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 350
travel mm : 2.20...2.30
2nd speed rpm : 510
travel mm : 3.20...3.50
3rd speed rpm : 1150
travel mm : 7.50...8.80
4th speed rpm : 1200
travel mm : 8.90...9.10

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1180
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Aneroid pressure h: 700
Del.quantity : 180.0...182.0
1000 : (177.0...185.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 61...69

Testing:
1st rack travel in: 11.10
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 8...16

Testing:
Speed rpm : 100
Minimum rack travel: 6.20
Speed rpm : 350
Rack travel in mm : 4.50...4.70

CONSTANT REGULATION
Speed rpm : 400...600

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.00...10.20

Measurement
Speed 1/min : 500

1st pressure hPa : 470
Rack travel in m: 10.70...10.90
2nd pressure hPa : 540
Rack travel in m: 11.40...11.60

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 650
Del.quantity cm³/ : 182.0...188.0
1000 s: (179.0...191.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: 700
Speed rpm : 1150
Del.quantity cm³/ : 134.0...138.0 *
1000 s: (131.0...141.0)
Spread cm³ : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 131.0...133.0
1000 s: (128.0...136.0)
Spread cm³ : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.10
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

:

* = Set at reduced-delivery stop.

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 21,9 n 1
 Edition : 05.03.90
 Replaces : 12.9.86
 Test oil : ISO-4113
 Combination no. : 0 401 840 750
 Injection pump
 Pump designation : PE12P110A32OLS3837-2
 EP type number : 0 411 810 711
 Governor
 Governor design. : RQV350...1150PA378-4
 Governor no. : 0 421 813 521

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM 424

1st version kW : 309.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 150...170

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 12- 1- 5- 9- 8- 3-
 : 4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
 : 180-225-240-285-300-
 Phasing : 345
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 1150
 Rack travel in mm : 11.40...11.50
 Del.quantity cm3/ : 12.2...12.4
 100 s: (11.9...12.7)
 Spread cm3 : 0.4
 100 s: (0.8)

2nd speed rpm : 350.0
 Rack travel in mm : 7.7...8.0
 Del.quantity cm3/ : 1.4...2.0
 100 s: (1.1...2.2)
 Spread cm3 : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1200
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1150
 Del.quantity : 122.0...124.0
 1000 : (119.0...127.0)
 Spread cm3 : 4.00
 1000 : (8.00)

RATED SPEED

1st version
 Control lever
 position degrees: 60...68

Testing:
 1st rack travel in: 10.40
 Speed rpm : 1170...1180

2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 16...22

Testing:
Speed rpm : 100
Minimum rack trave: 9.00
Speed rpm : 350
Rack travel in mm : 7.80...8.00

CONSTANT REGULATION
Speed rpm : 375...485

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 96.0...100.0
1000 s: (93.0...103.0)
Spread cm3 : 6.00
1000 s: (9.00)
Speed rpm : 1150
Del.quantity cm3/ : 90.0...94.0 *
1000 s: (87.0...97.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.40
Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...140.0
1000 s: (126.0...144.0)

Remarks:

:

Adjust stop lever to 0.5...1.0 mm
before stop.

* = Set at reduced-delivery stop.

F14

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SSC 24,7 a
 Edition : 05.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 840 761
 Injection pump
 Pump designation : PE12P120A520RS3168-1
 EP type number : 0 411 820 727
 Governor
 Governor design. : RQV350...1250PA852
 Governor no. : 0 421 813 601

Customer-spec. information
 Customer : SSCM

Engine : UD20-V12

1st version kW : 810.0
 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness : 8.00X2.50X1000
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 8- 5- 10- 3- 7-
 : 6- 11- 2- 9- 4- 12

Phasing : 0-15-60-75-120-135-
 : 180-195-240-255-300-
 Phasing : 315
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1250
 Rack travel in mm : 13.00...13.10
 Del.quantity cm3/ : 28.9...29.1
 : 100 s: (28.6...29.4)
 Spread cm3 : 0.5
 : 100 s: (0.9)

2nd speed rpm : 350.0
 Rack travel in mm : 4.5...4.9
 Del.quantity cm3/ : 2.0...2.3
 : 100 s: (1.7...2.6)
 Spread cm3 : 0.8
 : 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL
 1st speed rpm : 350
 travel mm : 1.40...1.60
 2nd speed rpm : 900
 travel mm : 4.90...5.20
 3rd speed rpm : 1250
 travel mm : 7.80...8.10

GUIDE SLEEVE POSITION
 Control-lever position
 Degree: -1
 Speed rpm : 1300
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1250
 Del.quantity : 289.0...291.0
 : 1000 : (286.0...294.0)
 Spread cm3 : 5.00
 : 1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 118...126

Testing:

1st rack travel in: 12.00

Speed rpm : 1290...1300

2nd rack travel in: 4.00

Speed rpm : 1400...1430

4th rack travel in: 1550

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 63...71

Testing:

Speed rpm : 100

Minimum rack travel: 6.20

Speed rpm : 350

Rack travel in mm : 4.60...4.80

CONSTANT REGULATION

Speed rpm : 420...540

START CUT-OUT

Speed 1/min : 270 (290)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00

Speed rpm : 1290...1300

Remarks:

:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : BAO 14,9 b
Edition : 05.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 840 768

Injection pump
Pump designation : PE12P110A52ORS3241
EP type number : 0 411 810 713
Governor
Governor design. : RQV325...1500PA931
Governor no. : 0 421 813 805

Customer-spec. information
Customer : BAUDOUIN

Engine : 12 F 11 SRE,GE

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
: (3.55...3.75)
Rack travel in mm : 9.00...12.00
Firing order : 1- 12- 9- 5- 3- 8-
: 11- 4- 2- 10- 7- 6

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1500

Rack travel in mm : 11.00...11.10

Del.quantity cm³/ : 12.4...12.7

100 s: (12.1...12.9)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 325.0

Rack travel in mm : 6.9...7.1

Del.quantity cm³/ : 1.3...1.8

100 s: (1.0...2.0)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325
travel mm : 1.00...1.40

2nd speed rpm : 1000
travel mm : 3.20...3.60

3rd speed rpm : 1500
travel mm : 8.10...8.30

4th speed rpm : 1800
travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1700

Rack travel in mm : 5.00...8.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1500

Aneroid pressure h: 900

Del.quantity : 124.0...127.0

1000 : (121.5...129.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 51...59

Testing:
1st rack travel in: 10.00
Speed rpm : 1540...1550
2nd rack travel in: 4.00
Speed rpm : 1630...1660
4th rack travel in: 1750
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 18...26

Testing:
Speed rpm : 100
Minimum rack travel: 8.50
Speed rpm : 325
Rack travel in mm : 6.90...7.10

CONSTANT REGULATION
Speed rpm : 300...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.00...11.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.50...9.60
2nd pressure hPa : 400
Rack travel in m: 10.50...10.60

START CUT-OUT

Speed 1/min : 275 (295)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del. quantity cm³/ : 73.0...77.0
1000 s: (70.5...79.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.00
Speed rpm : 1540...1550

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100

LOW IDLE

Speed rpm : 325
Rack travel in mm : 6.90...7.10
Del. quantity cm³/ : 13.0...18.0
1000 s: (10.5...20.5)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:
:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 21,0 d
Edition : 02.01.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 840 769

Injection pump
Pump designation : PE12P120A520/4LS3854
EP type number : 0 411 820 728
Governor
Governor design. : RQ750PA933
Governor no. : 0 421 801 495

Customer-spec. information
Customer : MAN

Engine : D2842LE

1st version kW : 380.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30
: (4.15...4.35)
Rack travel in mm : 9.00...12.00
Firing order : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
Phasing : 345
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 700
Rack travel in mm : 11.70...11.80
Del.quantity cm3/ : 21.5...21.7
100 s: (21.2...22.0)
Spread cm3 : 0.5
100 s: (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 4.4...4.6
Del.quantity cm3/ : 1.7...2.3
100 s: (1.4...2.6)
Spread cm3 : 0.8
100 s: (1.2)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del.quantity : 215.0...217.0
1000 : (212.0...220.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Testing:
1st rack travel in: 10.70
Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 786...799
4th rack travel in: 950
Speed rpm : 0.00...1.00

Remarks:

: MAN-NR. 2-7978

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 21,0 d1
Edition : 23.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 840 769A

Injection pump
Pump designation : PE12P120A520/4LS3854
EP type number : 0 411 820 728
Governor
Governor design. : RQ750PA933
Governor no. : 0 421 801 495

Cust. part no. : 2-7981

Customer-spec. information
Customer : MAN

Engine : D2842LE

1st version kW : 380.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30
: (4.15...4.35)
Rack travel in mm : 9.00...12.00
Firing order : 12- 1- 5- 9- 8- 3-
4- 11- 10- 2- 6- 7

Phasing : 0-45-60-105-120-165-
180-225-240-285-300-
345

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 12

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.00...13.10

Del.quantity cm³/ : 25.0...25.2

100 s: (24.7...25.5)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.4...4.6

Del.quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.8

100 s: (1.2)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 250.0...252.0

1000 : (247.0...255.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.00

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 786...799

4th rack travel in: 950

Speed rpm : 0.00...1.00

STARTING FUEL DELIVERY

Del.quantity cm3/ : 165.0...185.0
1000 s: (161.0...189.0)

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 a 1
Edition : 16.02.90
Replaces : 11.3.88
Test oil : ISO-4113

Combination no. : 0 401 846 194

Injection pump
Pump designation : PE6P100A72ORS15
EP type number : 0 411 806 106
Governor
Governor design. : RQ250/1100PA111DR
Governor no. : 0 421 803 045

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM 355

1st version kW : 154.5
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1090

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 10.0...10.2

100 s: (9.8...10.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.5)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.50...16.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1090

Del.quantity : 100.0...102.0

1000 : (98.0...104.0)

Spread cm3 : 3.00

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.00

Speed rpm : 1135...1150

2nd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 7.00
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 385...425

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1090
Rack travel in m: 12.00...12.10
2nd speed rpm : 450
Rack travel in m: 12.60...12.70
3rd speed rpm : 700
Rack travel in m: 12.30...12.40

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 700
Del.quantity cm3/ : 96.0...99.0
1000 s: (94.0...101.0)
Speed rpm : 450
Del.quantity cm3/ : 90.0...94.0
1000 s: (88.0...96.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1135...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : FIA 13,8 a
Edition : 01.02.90
Replaces : 10.2.89
Test oil : ISO-4113

Combination no. : 0 401 846 225

Injection pump
Pump designation : PE6P120A720RS167
EP type number : 0 411 826 053
Governor
Governor design. : RQ225/1100PA118
Governor no. : 0 421 801 027

Customer spec. information
Customer : IVECO-FIAT

Engine : 221A

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.00...2.10
: (1.95...2.15)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100
Rack travel in mm : 11.10...11.20
Del.quantity cm3/ : 17.0...17.2
100 s: (16.7...17.5)
Spread cm3 : 0.5
100 s: (0.9)

2nd speed rpm : 225.0
Rack travel in mm : 7.5...7.7
Del.quantity cm3/ : 1.7...2.3
100 s: (1.4...2.6)
Spread cm3 : 0.8
100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 600
Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1100
Del.quantity : 170.0...172.0
1000 : (167.0...175.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 600
Rack travel in mm : 15.8

Testing:

1st rack travel in: 10.10
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 225

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.60

Speed rpm : 225

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 320...380

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1100

Rack travel in m: 11.10...11.20

2nd speed rpm : 600

Rack travel in m: 11.10...11.30

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.10

Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 8,0 r
Edition : 14.02.1990
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 351
Injection pump
Pump designation : PE6P100A720RS332
Governor
Governor design. : RQV200...1200PA168R

Customer-spec. information
Customer : SCANIA

Engine : DS 8

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 35...45

Inlet press., bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.5...2.6
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.5 (0.75)

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 14.10

Del.quantity cm³/ : 13.4...13.8

100 s : (-)

Spread cm³ : 0.5

100 s : (-)

2nd speed rpm : 225
Rack travel in mm : 6.00
Del.quantity cm³/ : 1.0...1.2
100 s : (-)
Spread cm³ : 0.15
100 s : (-)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1200
Aneroid pressure h: 260
Del.quantity : 134.0...138.0
1000 : (-)

RATED SPEED

1st version
Control Lever
position degrees: 62...70

Testing:
1st rack travel in: 16.30
Speed rpm : 1190...1210
2nd rack travel in: 10.95
Speed rpm : 1285...1315
3rd rack travel in: 1.40...8.10
Speed rpm : 1385...1415
4th rack travel in: 1550
Speed rpm : -

LOW IDLE 1
Control Lever
position degrees: 6...14

Testing:
Speed rpm : 200
Minimum rack trave: 6.20
Speed rpm : 300
Rack travel in mm : 3.70...5.90
Rack travel in mm : 2.85
Speed rpm : 400
Speed rpm : 500
Maximum rack trave: 1.00

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 260
Rack travel mm : 13.90...14.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.00...12.20

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: ?
Speed rpm : 1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190...240
1000 s: (-)

LOW IDLE

Speed rpm : 225
Del.quantity cm3/ : 11.0...13.0
1000 s: (-)

Remarks:
: MACK ENDT 475

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,8 L 1
 Edition : 21.04.89
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 413
 Injection pump
 Pump designation : PE6P110A720RS371-1
 EP type number : 0 411 816 166
 Governor
 Governor design. : RQV300...1100PA455R
 Governor no. : 0 421 813 305

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : OM355A

1st version kW : 206.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 16.0...16.2

100 s: (15.7...16.5)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 300.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 1.4...2.0
 100 s: (1.1...2.2)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1100

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 700

Del.quantity : 160.0...162.0

1000 : (157.0...165.0)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 10.70

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1225...1255
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 11...19

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 300
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 470...530

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.70...11.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.00...11.10
2nd pressure hPa : 390
Rack travel in m: 11.50...11.60
3rd pressure hPa : 350
Rack travel in m: 11.20...11.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm3/ : 156.0...160.0
1000 s: (153.0...163.0)
Spread cm3 : 6.00
1000 s: (9.00)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 135.0...137.0
1000 s: (132.0...140.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

G02

1st version
1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (132.0...159.0)

Remarks:
:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,6 u1
Edition : 09.09.88
Replaces : 5.84
Test oil : ISO-4113

Combination no. : 0 401 846 461

Injection pump
Pump designation : PE6P110A720RS441
EP type number : 0 411 816 148
Governor
Governor design. : RQ225/1200PA617
Governor no. : 0 421 801 157

Customer-spec. information
Customer : DAF

Engine : DHS825

1st version kw : 184.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.20...12.30

Del.quantity cm3/ : 13.7...13.9

100 s: (13.4...14.1)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 225.0

Rack travel in mm : 5.5...5.7

Del.quantity cm3/ : 1.0...1.5

100 s: (0.7...1.7)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 700

Del.quantity : 137.0...139.0

1000 : (134.5...141.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.20

Speed rpm : 1235...1250

2nd rack travel in: 4.00

Speed rpm : 1310...1340

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 225

Rack travel in mm : 5.6

Testing:

Speed rpm : 100

Minimum rack trave: 6.70

Speed rpm : 225

Rack travel in mm : 5.50...5.70

Rack travel in mm : 2.00

Speed rpm : 370...410

TORQUE CONTROL

Dimension a mm : -

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 12.20...12.30

2nd speed rpm : 1190

Rack travel in m: 12.10...12.30

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 700

Rack travel mm : 12.20...12.30

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 10.10...10.20

2nd pressure hPa : 360

Rack travel in m: 11.70...11.80

3rd pressure hPa : 290

Rack travel in m: 10.60...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600

Del.quantity cm3/ : 92.0...94.0

1000 s: (89.5...96.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.20

Speed rpm : 1235...1250

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 245.0...285.0

1000 s: (241.0...289.0)

Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 225

Rack travel in mm : 5.50...5.70

Del.quantity cm3/ : 10.0...15.0

1000 s: (7.5...17.5)

Spread cm3 : 4.50

1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 o 1
Edition : 04.05.90
Replaces : 4.11.88
Test oil : ISO-4113

Combination no. : 0 401 846 471

Injection pump
Pump designation : PE6P100A72ORS447
EP type number : 0 411 806 191
Governor
Governor design. : RQ225/1200PA617
Governor no. : 0 421 801 157

Customer-spec. information
Customer : DAF

Engine : DHT 825

1st version kW : 162.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
: (3.15...3.35)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.30 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.40...11.50

Del.quantity cm³/ : 11.8...12.0

100 s: (11.6...12.2)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 225.0

Rack travel in mm : 5.3...5.5

Del.quantity cm³/ : 1.0...1.4

100 s: (0.7...1.6)

Spread cm³ : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 700

Del.quantity : 118.5...120.5

1000 : (116.5...122.5)

Spread cm³ : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.40

Speed rpm : 1235...1250

2nd rack travel in: 4.00

Speed rpm : 1305...1335

4th rack travel in: 1450

Speed rpm : 0.00...1.00

LOW IDLE*1

Setting point w/out bumper spring

Speed rpm : 225

Rack travel in mm : 5.4

Testing:

Speed rpm : 100

Minimum rack trave: 6.00

Speed rpm : 225

Rack travel in mm : 5.30...5.50

Rack travel in mm : 2.00

Speed rpm : 365...405

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 11.60...11.70

2nd speed rpm : 1200

Rack travel in m: 11.30...11.50

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 700

Rack travel mm : 11.40...11.50

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 10.40...10.50

2nd pressure hPa : 315

Rack travel in m: 11.10...11.20

3rd pressure hPa : 270

Rack travel in m: 10.50...10.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600

Del.quantity cm3/ : 93.5...95.5

1000 s: (91.5...97.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.40

Speed rpm : 1235...1250

STARTING FUEL DELIVERY

G06

Speed rpm : 100

Del.quantity cm3/ : 210.0...230.0

1000 s: (206.0...234.0)

Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 225

Rack travel in mm : 5.30...5.50

Del.quantity cm3/ : 10.0...14.0

1000 s: (7.5...16.5)

Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

:

See VDT-I-420/115

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 h
Edition : 13.12.89
Replaces : 2.10.89
Test oil : ISO-4113

Combination no. : 0 401 846 482

Injection pump
Pump designation : PE6P120A32ORS257
EP type number : 0 411 826 075
Governor
Governor design. : RQV250...1100PA680
Governor no. : 0 421 813 374

Customer-spec. information
Customer : ENASA

Engine : 96 T1 AX,BX

1st version kW : 228.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test Lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1080

Rack travel in mm : 10.00...10.10

Del.quantity cm3/ : 18.8...19.0

100 s: (18.5...19.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.4...5.6

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 350
travel mm : 1.70...2.30

3rd speed rpm : 650
travel mm : 4.00...4.60

4th speed rpm : 1145
travel mm : 8.30...8.50

5th speed rpm : 1225
travel mm : 9.20...9.60

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 1130

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1080

Aneroid pressure h: 900

Del.quantity : 188.0...190.0
1000 : (185.0...193.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 103...111

Testing:
1st rack travel in: 9.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1320
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 72...80

Testing:
Speed rpm : 100
Minimum rack travel: 7.00
Speed rpm : 250
Rack travel in mm : 5.40...5.60

CONSTANT REGULATION

Speed rpm : 250...380

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1080
Rack travel in m: 10.00...10.10
2nd speed rpm : 650
Rack travel in m: 10.50...10.70
3rd speed rpm : 850
Rack travel in m: 10.20...10.40

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 10.10...10.30

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.70...9.10
2nd pressure hPa : 370
Rack travel in m: 9.80...9.90
3rd pressure hPa : 290

G08

Rack travel in m: 9.20...9.40

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 650
Del.quantity cm3/ : 173.0...179.0
1000 s: (170.0...182.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 128.0...130.0
1000 s: (125.0...133.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.00
Speed rpm : 1140...1150

INTERMEDIATE RATED SPEED

Rack travel in mm : 5.20
Speed rpm : 600...0
Rack travel in mm : 5.40
Speed rpm : 600...0

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)
Rack travel in mm : 19.50...21.00

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 b 4
 Edition : 01.02.90
 Replaces : 15.8.89
 Test oil : ISO-4113

Combination no. : 0 401 846 497

Injection pump
 Pump designation : PE6P120A32ORS438-1
 EP type number : 0 411 826 133
 Governor
 Governor design. : RQV275...1200PA648-2
 Governor no. : 0 421 813 490

Customer-spec. information
 Customer : RVI

Engine : MIDS062030

1st version kW : 150.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 10.20...10.30

Del.quantity cm3/ : 13.3...13.5

100 s: (13.0...13.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 6.4...6.6

Del.quantity cm3/ : 1.5...2.1
 100 s: (1.2...2.4)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
 travel mm : 1.20...1.40

2nd speed rpm : 450
 travel mm : 3.30...4.00

3rd speed rpm : 850
 travel mm : 5.90...6.20

4th speed rpm : 1200
 travel mm : 8.20...8.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1200

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200

Del.quantity : 133.0...135.0

1000 : (130.0...138.0)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 9.20
Speed rpm : 1265...1275
2nd rack travel in: 4.00
Speed rpm : 1355...1385
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 64...72

Testing:
Speed rpm : 200
Minimum rack trave: 8.80
Speed rpm : 275
Rack travel in mm : 6.40...6.60

CONSTANT REGULATION
Speed rpm : 275...360

START CUT-OUT

Speed 1/min : 1295 (215)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 750
Del.quantity cm³/ : 116.0...122.0
 1000 s: (113.0...125.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: -1.00
Speed rpm : 1265...1275

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 105.0...125.0
 1000 s: (101.0...129.0)

LOW IDLE

G10

Speed rpm : 275
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 15.0...21.0
 1000 s: (12.0...24.0)
Spread cm³ : 8.00
 1000 s: (12.00)

Remarks:

:
Start-of-delivery mark at the "INJ"
marking

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 L
Edition : 01.02.90
Replaces : 15.8.89
Test oil : ISO-4113

Combination no. : 0 401 846 499

Injection pump
Pump designation : PE6P120A320RS474
EP type number : 0 411 826 134
Governor
Governor design. : RQV275...1200PA425-3
Governor no. : 0 421 813 441

Customer-spec. information
Customer : RVI

Engine : MIDS062030

1st version kW : 168.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200
Rack travel in mm : 11.90...12.00
Del.quantity cm3/ : 15.1...15.3
100 s: (14.8...15.6)
Spread cm3 : 0.5
100 s: (0.9)

2nd speed rpm : 275.0
Rack travel in mm : 6.4...6.6
Del.quantity cm3/ : 1.5...2.1
100 s: (1.2...2.4)
Spread cm3 : 0.8
100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 275
travel mm : 1.20...1.40
2nd speed rpm : 400
travel mm : 2.90...3.40
3rd speed rpm : 900
travel mm : 5.80...6.00
4th speed rpm : 1200
travel mm : 7.80...8.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1250
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1200
Aneroid pressure h: 700
Del.quantity : 151.0...153.0
1000 : (148.0...156.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 118...126

Testing:

1st rack travel in: 10.90
Speed rpm : 1285...1295
2nd rack travel in: 4.00
Speed rpm : 1400...1430
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 66...74

Testing:

Speed rpm : 200
Minimum rack travel: 9.60
Speed rpm : 275
Rack travel in mm : 6.50...6.70

CONSTANT REGULATION

Speed rpm : 275...360

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.60...10.80
2nd pressure hPa : 195
Rack travel in m: 11.60...11.70
3rd pressure hPa : 175
Rack travel in m: 11.10...11.30

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 750

Del.quantity cm³/ : 139.0...145.0
1000 s: (136.0...148.0)

Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 92.0...94.0
1000 s: (89.0...97.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: -1.00
Speed rpm : 1285...1295

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 105.0...125.0
1000 s: (101.0...129.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 6.40...6.60
Del.quantity cm³/ : 15.0...21.0
1000 s: (12.0...24.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:
Start-of-delivery mark at the "INJ"
marking

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 7,1 d
Edition : 16.02.90
Replaces : 9.11.89
Test oil : ISO-4113

Combination no. : 0 401 846 505

Injection pump
Pump designation : PE6P110A32ORS483
EP type number : 0 411 816 159
Governor
Governor design. : RQV250...1200PA918
Governor no. : 0 421 813 772

Customer-spec. information
Customer : VOLVO

Engine : TD71F

1st version kW : 162.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
: (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.30...12.40

Del.quantity cm3/ : 12.7...12.9

100 s: (12.4...13.2)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.3)

Spread cm3 : 0.3

100 s: (0.6)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.10...1.30

2nd speed rpm : 380
travel mm : 2.30...2.60

3rd speed rpm : 500
travel mm : 2.90...3.30

4th speed rpm : 1260
travel mm : 7.70...7.90

5th speed rpm : 1400
travel mm : 9.00...9.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1330

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 900

Del.quantity : 127.0...129.0

1000 : (124.0...132.0)

Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 109...117

Testing:
1st rack travel in: 11.30
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1380...1410
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 56...64

Testing:
Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 250
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION
Speed rpm : 250...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.30...12.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.20...10.30
2nd pressure hPa : 570
Rack travel in m: 12.10...12.20
3rd pressure hPa : 270
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm³/ : 85.0...88.0
 1000 s: (82.0...91.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...200.0
 1000 s: (166.0...204.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.30...5.50
Del.quantity cm³/ : 16.0...20.0
 1000 s: (13.0...23.0)
Spread cm³ : 3.00
 1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 7,1 d 1
 Edition : 05.03.90
 Replaces : 9.11.89
 Test oil : ISO-4113
 Combination no. : 0 401 846 506
 Injection pump
 Pump designation : PE6P110A32ORS483-1
 EP type number : 0 411 816 160
 Governor
 Governor design. : RQV250...1200PA918-1
 Governor no. : 0 421 813 773

Customer-spec. information
 Customer : VOLVO

Engine : TD71FS

1st version kW : 180.0
 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10
 : (2.95...3.15)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.10...13.20

Del.quantity cm3/ : 14.2...14.4

100 s: (13.9...14.7)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.3)

Spread cm3 : 0.3

100 s: (0.6)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 380

travel mm : 2.30...2.60

3rd speed rpm : 500

travel mm : 2.90...3.30

4th speed rpm : 1260

travel mm : 7.70...7.90

5th speed rpm : 1400

travel mm : 9.00...9.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1330

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 142.0...144.0

1000 : (139.0...147.0)

Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 109...117

Testing:
1st rack travel in: 12.10
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1385...1415
4th rack travel in: 1500
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 56...64

Testing:
Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 250
Rack travel in mm : 5.30...5.50

CONSTANT REGULATION
Speed rpm : 250...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.10...13.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.20...10.30
2nd pressure hPa : 710
Rack travel in m: 12.20...12.30
3rd pressure hPa : 380
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1000
Del.quantity cm3/ : 137.0...143.0
1000 s: (135.0...145.0)
Aneroid pressure h: -
Speed rpm : 700

Del.quantity cm3/ : 85.0...88.0
1000 s: (82.0...91.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.10
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...200.0
1000 s: (166.0...204.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.30...5.50
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.0...23.0)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,6 x2
 Edition : 16.02.90
 Replaces : 10.4.87
 Test oil : ISO-4113
 Combination no. : 0 401 846 540
 Injection pump
 Pump designation : PE6P110A32ORS407-1
 EP type number : 0 411 816 147
 Governor
 Governor design. : RQ275/1000PA861
 Governor no. : 0 421 801 397

Customer-spec. information
 Customer : DAF

Engine : LT 195

1st version kW : 195.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 600
 Rack travel in mm : 12.80...12.90
 Del.quantity cm3/ : 15.3...15.5
 100 s: (15.0...15.7)
 Spread cm3 : 0.4
 100 s: (0.7)

2nd speed rpm : 275.0
 Rack travel in mm : 7.2...7.4
 Del.quantity cm3/ : 1.4...1.9
 100 s: (1.1...2.1)
 Spread cm3 : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 600
 Rack travel in mm : 15.40...16.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 700
 Del.quantity : 153.0...155.0
 1000 : (150.5...157.5)
 Spread cm3 : 4.00
 1000 : (7.50)

RATED SPEED

1st version

Setting point:
 Speed rpm : 600
 Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.40
 Speed rpm : 1030...1045
 2nd rack travel in: 4.00
 Speed rpm : 1100...1130
 4th rack travel in: 1300
 Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 275

Rack travel in mm : 7.3

Testing:

Speed rpm : 100

Minimum rack trave: 8.40

Speed rpm : 275

Rack travel in mm : 7.20...7.40

Rack travel in mm : 2.50

Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : 0.25

Torque control curve - 1st version

1st speed rpm : 600

Rack travel in m: 13.00...13.10

2nd speed rpm : 980

Rack travel in m: 12.40...12.60

3rd speed rpm : 900

Rack travel in m: 12.50...12.80

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 700

Rack travel mm : 12.80...12.90

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 11.70...11.90

2nd pressure hPa : 340

Rack travel in m: 12.50...12.60

3rd pressure hPa : 310

Rack travel in m: 12.10...12.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 980

Del.quantity cm3/ : 145.5...149.5

1000 s: (142.5...152.5)

Aneroid pressure h: -

Speed rpm : 600

Del.quantity cm3/ : 130.0...132.0

1000 s: (127.5...134.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40

Speed rpm : 1030...1045

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 220.0...260.0

1000 s: (216.0...264.0)

Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 275

Rack travel in mm : 7.20...7.40

Del.quantity cm3/ : 14.0...19.0

1000 s: (11.5...21.5)

Spread cm3 : 4.50

1000 s: (7.50)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10.1 a
 Edition : 13.12.89
 Replaces : 25.3.88
 Test oil : ISO-4113
 Combination no. : 0 401 846 544
 Injection pump
 Pump designation : PE6P100A820LS130
 EP type number : 0 411 806 179
 Governor
 Governor design. : RQ250/1050PA627-1
 Governor no. : 0 421 801 407

Customer-spec. information
 Customer : ENASA

Engine : 95 A1 BZ,

1st version kW : 125.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 11.80...11.90

Del.quantity cm³/ : 11.4...11.6

100 s: (11.2...11.8)

Spread cm³ : 0.3

100 s: (0.6)

2nd speed rpm : 250.0
 Rack travel in mm : 7.9...8.1
 Del.quantity cm³/ : 1.8...2.2
 100 s: (1.5...2.4)

Spread cm³ : 0.3
 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del.quantity : 114.0...116.0

1000 : (112.0...118.0)

Spread cm³ : 3.50
 1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.80

Speed rpm : 1095...1110

2nd rack travel in: 4.00

Speed rpm : 1140...1170

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 350...390

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.80

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 118.0...133.0

1000 s: (114.0...137.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 b
 Edition : 05.03.90
 Replaces : 20.10.89
 Test oil : ISO-4113
 Combination no. : 0 401 846 546
 Injection pump
 Pump designation : PE6P100A820LS130
 EP type number : 0 411 806 179
 Governor
 Governor design. : RQV250...1050PA807-1
 Governor no. : 0 421 813 665

Customer-spec. information
 Customer : ENASA

Engine : 95 A1 BX,

1st version kW : 125.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 11.4...11.6

100 s: (11.2...11.8)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del.quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 350
 travel mm : 1.90...2.50

3rd speed rpm : 700
 travel mm : 4.50...5.10

4th speed rpm : 1095
 travel mm : 8.00...8.20

5th speed rpm : 1185
 travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1110

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del.quantity : 114.0...116.0

1000 : (112.0...118.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 115...123

Testing:

1st rack travel in: 10.70

Speed rpm : 1090...1100

2nd rack travel in: 4.00

Speed rpm : 1170...1200

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 80...88

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 250...400

START CUT-OUT

Speed 1/min : 170 (190)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 260.0...280.0

1000 s: (256.0...284.0)

Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 c
 Edition : 13.12.89
 Replaces : 20.10.89
 Test oil : ISO-4113
 Combination no. : 0 401 846 547
 Injection pump
 Pump designation : PE6P110A820LS513
 EP type number : 0 411 816 174
 Governor
 Governor design. : RQV250...1000PA811
 Governor no. : 0 421 813 556

Customer-spec. information
 Customer : ENASA

Engine : 95 R1 AX

1st version kW : 184.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 Q15

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 12.80...12.90

Del.quantity cm³/ : 17.6...17.8

100 s: (17.3...18.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...6.8

Del.quantity cm³/ : 1.8...2.3

100 s: (1.5...2.5)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 400
 travel mm : 2.20...2.80

3rd speed rpm : 650
 travel mm : 4.50...5.10

4th speed rpm : 1050
 travel mm : 8.50...8.70

5th speed rpm : 1140
 travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h: 900

Del.quantity : 176.0...178.0

1000 : (173.0...181.0)

Spread cm³ : 4.00
 1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 11.80
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1130...1160
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 81...89

Testing:
Speed rpm : 100
Minimum rack travel: 8.20
Speed rpm : 250
Rack travel in mm : 6.60...6.80

CONSTANT REGULATION
Speed rpm : 250...480

TORQUE CONTROL
Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 980
Rack travel in m: 12.80...12.90
2nd speed rpm : 700
Rack travel in m: 13.30...13.50
3rd speed rpm : 850
Rack travel in m: 13.00...13.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.00...13.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...11.20
2nd pressure hPa : 440
Rack travel in m: 12.50...12.60
3rd pressure hPa : 290
Rack travel in m: 11.50...11.70

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 600
Del.quantity cm³/ : 178.0...182.0
 1000 s: (175.0...185.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 132.0...134.0
 1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
 1000 s: (146.0...174.0)

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 d
Edition : 13.12.89
Replaces : 20.10.89
Test oil : ISO-4113

Combination no. : 0 401 846 549

Injection pump
Pump designation : PE6P100A820LS503
EP type number : 0 411 806 197
Governor
Governor design. : RQV250...1000PA811
Governor no. : 0 421 813 556

Cust. part no. : 181333

Customer-spec. information
Customer : ENASA

Engine : 95 T1 AX,BX

1st version kW : 165.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 14.20...14.30

Del.quantity cm3/ : 16.5...16.7

100 s: (16.3...16.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.7...7.9

Del.quantity cm3/ : 1.8...2.2
100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 400
travel mm : 2.20...2.80

3rd speed rpm : 650
travel mm : 4.50...5.10

4th speed rpm : 1050
travel mm : 8.50...8.70

5th speed rpm : 1140
travel mm : 9.70...10.10

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 1040

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 980

Aneroid pressure h: 900

Del.quantity : 165.0...167.0
1000 : (163.0...169.0)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version
Control lever
position degrees: 121...129

Testing:

1st rack travel in: 13.20
Speed rpm : 1040...1050
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 81...89

Testing:

Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 250...450

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 980
Rack travel in m: 14.20...14.30
2nd speed rpm : 550
Rack travel in m: 15.00...15.30
3rd speed rpm : 750
Rack travel in m: 14.80...15.00
4th speed rpm : 850
Rack travel in m: 14.40...14.60

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 14.70...14.90

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.90...13.30
2nd pressure hPa : 400

Rack travel in m: 14.10...14.20
3rd pressure hPa : 300
Rack travel in m: 13.40...13.60

START CUT-OUT

Speed 1/min : 170 (190)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 170.0...174.0
1000 s: (168.0...176.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 130.0...132.0
1000 s: (127.0...135.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 180.0...200.0
1000 s: (176.0...204.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 f
Edition : 13.12.89
Replaces : 19.5.88
Test oil : ISO-4113

Combination no. : 0 401 846 551

Injection pump
Pump designation : PE6P110A320RS263-1
EP type number : 0 411 816 175
Governor
Governor design. : RQ250/1000PA218-2
Governor no. : 0 421 801 411

Customer-spec. information
Customer : ENASA

Engine : 96 T4 AY

1st version kW : 176.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900

Rack travel in mm : 11.40...11.50

Del.quantity cm3/ : 16.0...16.2

100 s: (15.7...16.5)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0
Rack travel in mm : 5.9...6.1
Del.quantity cm3/ : 1.7...2.3
100 s: (1.4...2.6)
Spread cm3 : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Del.quantity : 160.0...162.0
1000 : (157.0...165.0)
Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version

Setting point:
Speed rpm : 600
Rack travel in mm : 16.0

Testing:

1st rack travel in: 10.40
Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1110...1140
4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 350...390

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.40

Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 143.0...163.0

1000 s: (139.0...167.0)

Remarks:

:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 e
Edition : 13.12.89
Replaces : 2.10.89
Test oil : ISO-4113

Combination no. : 0 401 846 552

Injection pump
Pump designation : PE6P100A820LS503-1
EP type number : 0 411 806 198
Governor
Governor design. : RQ250/1000PA352-1
Governor no. : 0 421 801 412

Customer-spec. information
Customer : ENASA

Engine : 95 TEDY

1st version kW : 155.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.85...2.95)
Rack travel in mm : 9.00...12.00

H01

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 980

Rack travel in mm : 13.70...13.80

Del.quantity cm3/ : 15.5...15.7

100 s: (15.3...15.9)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0
Rack travel in mm : 7.8...8.0
Del.quantity cm3/ : 1.8...2.2
100 s: (1.5...2.4)
Spread cm3 : 0.3
100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 600
Rack travel in mm : 16.00...17.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 980
Aneroid pressure h: 900
Del.quantity : 155.0...157.0
1000 : (153.0...159.0)
Spread cm3 : 3.50
1000 : (6.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 600
Rack travel in mm : 16.6

Testing:
1st rack travel in: 12.70
Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1100...1130

4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.40

Torque control curve - 1st version

1st speed rpm : 980

Rack travel in m: 13.70...13.80

2nd speed rpm : 700

Rack travel in m: 14.40...14.80

3rd speed rpm : 825

Rack travel in m: 13.90...14.30

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 900

Rack travel mm : 14.10...14.30

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 12.90...13.30

2nd pressure hPa : 400

Rack travel in m: 14.10...14.20

3rd pressure hPa : 300

Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

Speed rpm : 700

Del.quantity cm3/ : 159.0...163.0

1000 s: (157.0...165.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 130.0...132.0

1000 s: (127.0...135.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.70

Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 150.0...170.0

1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 h
Edition : 05.03.90
Replaces : 1.12.89
Test oil : ISO-4113

Combination no. : 0 401 846 561

Injection pump
Pump designation : PE6P120A320RS519
EP type number : 0 411 826 145
Governor
Governor design. : RQ275/1050PA899
Governor no. : 0 421 801 460

Customer-spec. information
Customer : RVI

Engine : MIHS 06.20.45

1st version kW : 185.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 16.7...16.9

100 s: (16.4...17.2)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 275.0
Rack travel in mm : 5.6...6.0
Del.quantity cm3/ : 1.3...1.9
100 s: (1.0...2.2)

Spread cm3 : 0.8
100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Aneroid pressure h: 700
Del.quantity : 167.0...169.0
1000 : (164.0...172.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Setting point:
Speed rpm : 600
Rack travel in mm : 20.0

Testing:
1st rack travel in: 10.10

Speed rpm : 1110...1125
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 275
Rack travel in mm : 5.8

Testing:

Speed rpm : 200
Minimum rack travel: 7.40
Speed rpm : 275
Rack travel in mm : 5.70...5.90
Rack travel in mm : 2.10
Speed rpm : 345...385

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 11.10...11.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.70...9.90
2nd pressure hPa : 260
Rack travel in m: 10.60...10.70
3rd pressure hPa : 220
Rack travel in m: 10.00...10.20

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 700
Del.quantity cm3/ : 159.0...165.0
1000 s: (156.0...168.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 105.0...107.0
1000 s: (102.0...110.0)

BREAKAWAY

1st version

H04

1mm rack travel less than

full load rack tr: -1.00
Speed rpm : 1110...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 145.0...175.0
1000 s: (141.0...179.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 5.60...6.00
Del.quantity cm3/ : 13.0...19.0
1000 s: (10.0...22.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 a3
 Edition : 23.03.90
 Replaces : 13.10.89
 Test oil : ISO-4113
 Combination no. : 0 401 846 563
 Injection pump
 Pump designation : PE6P120A320RS257
 EP type number : 0 411 826 075
 Governor
 Governor design. : RQV250...1050PA808-3
 Governor no. : 0 421 813 812

Customer-spec. information
 Customer : ENASA

Engine : 96 T3 CX

1st version kW : 228.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 10.40...10.50

Del.quantity cm3/ : 17.9...18.1

100 s: (17.6...18.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...1.40

2nd speed rpm : 350

travel mm : 1.90...2.50

3rd speed rpm : 700

travel mm : 4.50...5.10

4th speed rpm : 1095

travel mm : 8.00...8.20

5th speed rpm : 1185

travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1110

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 900

Del.quantity : 179.0...181.0
1000 : (176.0...184.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 9.40
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack travel: 7.20
Speed rpm : 250
Rack travel in mm : 5.60...5.80

CONSTANT REGULATION
Speed rpm : 250...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 10.40...10.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 7.60...8.00
2nd pressure hPa : 650
Rack travel in m: 10.00...10.10
3rd pressure hPa : 380
Rack travel in m: 8.40...8.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1030
Del.quantity cm3/ : 191.0...197.0
1000 s: (188.0...200.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 104.0...106.0
1000 s: (101.0...109.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)
Rack travel in mm : 19.50...21.00

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 a4
 Edition : 30.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 563A
 Injection pump
 Pump designation : PE6P120A320RS257
 EP type number : 0 411 826 075
 Governor
 Governor design. : RQV250...1050PA808-3
 Governor no. : 0 421 813 812

Customer-spec. information
 Customer : ENASA

Engine : 96 T1 DW,EW

1st version kW : 206.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 10.60...10.70

Del.quantity cm3/ : 17.7...17.9

100 s: (17.4...18.2)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 5.6...5.8
 Del.quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)

Spread cm3 : 0.8
 100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40
 2nd speed rpm : 350
 travel mm : 1.90...2.50
 3rd speed rpm : 700
 travel mm : 4.50...5.10
 4th speed rpm : 1095
 travel mm : 8.00...8.20
 5th speed rpm : 1185
 travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1
 Speed rpm : 1110
 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 600
 Aneroid pressure h: 900

Del.quantity : 177.0...179.0
1000 : (174.0...182.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 9.60
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1330
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack travel: 7.20
Speed rpm : 250
Rack travel in mm : 5.60...5.80

CONSTANT REGULATION
Speed rpm : 250...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 10.60...10.70

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.30...8.70
2nd pressure hPa : 400
Rack travel in m: 10.10...10.20
3rd pressure hPa : 230
Rack travel in m: 9.10...9.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1080
Del.quantity cm3/ : 197.0...203.0
1000 s: (194.0...206.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.60
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)
Rack travel in mm : 19.50...21.00

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 a5
 Edition : 30.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 563E
 Injection pump
 Pump designation : PE6P120A32ORS257
 EP type number : 0 411 826 075
 Governor
 Governor design. : RQV250...1050PA808-3
 Governor no. : 0 421 813 812

Customer-spec. information
 Customer : ENASA

Engine : 96 T1 CV

1st version kW : 228.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 10.40...10.50

Del.quantity cm3/ : 17.9...18.1

100 s: (17.6...18.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.6...5.8

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...1.40

2nd speed rpm : 350

travel mm : 1.90...2.50

3rd speed rpm : 700

travel mm : 4.50...5.10

4th speed rpm : 1095

travel mm : 8.00...8.20

5th speed rpm : 1185

travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1110

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 900

Del.quantity : 179.0...181.0
1000 : (176.0...184.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 9.40
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack trave: 7.20
Speed rpm : 250
Rack travel in mm : 5.60...5.80

CONSTANT REGULATION
Speed rpm : 250...450

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 10.40...10.50

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 7.60...8.00
2nd pressure hPa : 650
Rack travel in m: 10.00...10.10
3rd pressure hPa : 380
Rack travel in m: 8.40...8.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1030
Del.quantity cm3/ : 191.0...197.0
1000 s: (188.0...200.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 104.0...106.0
1000 s: (101.0...109.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)
Rack travel in mm : 19.50...21.00

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 d
Edition : 30.03.90
Replaces : 20.10.89
Test oil : ISO-4113

Combination no. : 0 401 846 565

Injection pump
Pump designation : PE6P110A820LS513
EP type number : 0 411 816 174
Governor
Governor design. : RQ250/1000PA352-1
Governor no. : 0 421 801 412

Customer-spec. information
Customer : ENASA

Engine : 95 R3AZ,R1AZ

1st version kW : 184.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
: (3.15...3.35)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.10...13.20

Del.quantity cm3/ : 17.9...18.1

100 s: (17.6...18.4)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.6...6.8

Del.quantity cm3/ : 1.8...2.3

100 s: (1.5...2.5)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 16.00...17.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 900

Del.quantity : 179.0...181.0

1000 : (176.0...184.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.6

Testing:

1st rack travel in: 11.80

Speed rpm : 1045...1060

2nd rack travel in: 4.00

Speed rpm : 1095...1125

4th rack travel in: 1200
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.0

Testing:
Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL
Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 700
Rack travel in m: 13.30...13.70
2nd speed rpm : 900
Rack travel in m: 12.80...13.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.10...13.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.80...11.20
2nd pressure hPa : 450
Rack travel in m: 12.60...12.70
3rd pressure hPa : 300
Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 900
Del.quantity cm3/ : 175.0...179.0
1000 s: (173.0...181.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : SCA 11,0r12
Edition : 16.02.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 734

Injection pump
Pump designation : PE6P110A72ORS3040
EP type number : 0 411 816 713
Governor
Governor design. : RQV200...1000PA555
Governor no. : 0 421 813 280

Customer-spec. information
Customer : SCANIA

Engine : DS11 14

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40
: (3.25...3.45)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 600

Rack travel in mm : 13.60...13.70

Del.quantity cm3/ : 17.5...17.7

100 s: (17.3...17.9)

Spread cm3 : 0.6

100 s: (0.8)

2nd speed rpm : 225.0

Rack travel in mm : 4.4...4.6

Del.quantity cm3/ : 1.7...2.1

100 s: (-)

Spread cm3 : 0.2

100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1050

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 700

Del.quantity : 175.0...177.0

1000 : (173.0...179.0)

Spread cm3 : 6.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 56...64

Testing:

1st rack travel in: 12.60

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1150...1180

4th rack travel in: 1300

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 5...13

Testing:

Speed rpm : 100
Minimum rack travel: 5.90
Speed rpm : 225
Rack travel in mm : 4.40...4.60
Rack travel in mm : 2.00
Speed rpm : 320...380

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 700
Rack travel mm : 13.60...13.70

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.60...11.80
2nd pressure hPa : 410
Rack travel in m: 13.20...13.30
3rd pressure hPa : 260
Rack travel in m: 12.20...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1000
Del.quantity cm3/ : 175.0...180.0
1000 s: (172.5...182.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 127.0...131.0
1000 s: (125.0...133.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.60
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 240.0...290.0
Rack travel in mm : 20.00...21.00

LOW IDLE

H14

Speed rpm : 225
Rack travel in mm : 4.40...4.60
Del.quantity cm3/ : 17.0...21.0
Spread cm3 : 2.00
1000 s: (4.00)

Remarks:

:

ADDITIONAL INFORMATION

Check and set without ROBO diaphragm

For comb. with letter index see
VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over
on Aug. 30, 1984

Start of delivery - engine: 20° before
TDC

Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 e 5
 Edition : 05.03.90
 Replaces : 12.12.89
 Test oil : ISO-4113
 Combination no. : 0 401 846 818
 Injection pump
 Pump designation : PE6P120A320LS3810-10
 EP type number : 0 411 826 734
 Governor
 Governor design. : RQV350...1150PA720-1
 Governor no. : 0 421 813 539

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM421A

1st version kW : 184.0
 Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 15.8...16.0

100 s: (15.5...16.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del.quantity : 158.0...160.0

1000 : (155.0...163.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 112...120

Testing:

1st rack travel in: 9.70
Speed rpm : 1175...1185
2nd rack travel in: 4.00
Speed rpm : 1260...1290
4th rack travel in: 1360
Speed rpm : 0.00...1.50

LOW IDLE 1
Control lever
position degrees: 62...70

Testing:
Speed rpm : 100
Minimum rack trave: 6.70
Speed rpm : 350
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION
Speed rpm : 350...500

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.70...10.80
2nd speed rpm : 850
Rack travel in m: 11.00...11.20
3rd speed rpm : 950
Rack travel in m: 10.80...11.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.30...10.60

Measurement
Speed 1/min : 500

1st pressure hPa : 425
Rack travel in m: 10.50...10.60

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm3/ : 165.0...171.0
1000 s: (162.0...174.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: 700

Speed rpm : 1150
Del.quantity cm3/ : 128.0...131.0 *
1000 s: (125.0...134.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 141.0...143.0
1000 s: (138.0...146.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1175...1185

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

* = Set at reduced-delivery stop.

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 e12
Edition : 30.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 818

Injection pump
Pump designation : PE6P120A320LS3810-10
EP type number : 0 411 826 734
Governor
Governor design. : RQV350...1150PA720-2
Governor no. : 0 421 813 620

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM421A

1st version kW : 184.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 15.8...16.0

100 s: (15.5...16.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 350.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.5)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1250

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 700

Del.quantity : 158.0...160.0

1000 : (155.0...163.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 112...120

Testing:

1st rack travel in: 9.70
Speed rpm : 1175...1185
2nd rack travel in: 4.00
Speed rpm : 1260...1290
4th rack travel in: 1360
Speed rpm : 0.00...1.50

LOW IDLE 1
Control lever
position degrees: 62...70

Testing:
Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 350
Rack travel in mm : 4.90...5.10

CONSTANT REGULATION
Speed rpm : 350...500

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.70...10.80
2nd speed rpm : 850
Rack travel in m: 11.00...11.20
3rd speed rpm : 950
Rack travel in m: 10.80...11.00

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : -
Rack travel mm : 10.30...10.40

Measurement
Speed 1/min : 500

1st pressure hPa : 425
Rack travel in m: 10.50...10.60

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 600
Del.quantity cm3/ : 165.0...171.0
1000 s: (162.0...174.0)
Spread cm3 : 8.00
1000 s: (12.0)

Aneroid pressure h: 700
Speed rpm : 1150
Del.quantity cm3/ : 128.0...131.0 *
1000 s: (125.0...134.0)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 141.0...143.0
1000 s: (138.0...146.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.70
Speed rpm : 1175...1185

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

Remarks:

* = Set at reduced-delivery stop.

Adjust stop lever to 0.5...1.0 mm
before stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 d
Edition : 05.03.90
Replaces : 13.12.89
Test oil : ISO-4113

Combination no. : 0 401 846 862

Injection pump
Pump designation : PE6P110A320RS3201
EP type number : 0 411 816 753
Governor
Governor design. : RQ250/1050PA218-1
Governor no. : 0 421 801 406

Customer-spec. information
Customer : ENASA

Engine : 96 A4 AU

1st version kW : 150.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
: (3.15...3.25)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 12.10...12.20

Del.quantity cm³/ : 12.6...12.8

100 s: (12.3...13.1)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del.quantity cm³/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 600

Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del.quantity : 126.0...128.0

1000 : (123.0...131.0)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 16.0

Testing:

1st rack travel in: 11.10

Speed rpm : 1095...1110

2nd rack travel in: 4.00

Speed rpm : 1140...1170

4th rack travel in: 1250

Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250

Rack travel in mm : 6.0

Testing:

Speed rpm : 100

Minimum rack trave: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

Speed rpm : 290...330

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.10

Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 143.0...163.0
1000 s: (139.0...167.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.90...6.10

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 w
Edition : 16.02.90
Replaces : 24.6.88
Test oil : ISO-4113

Combination no. : 0 401 846 869

Injection pump
Pump designation : PE6P120A320RS3118
EP type number : 0 411 826 726
Governor
Governor design. : RQV250...1100PA649-1
Governor no. : 0 421 813 675

Customer-spec. information
Customer : VOLVO

Engine : THD 102 KD

1st version kW : 250.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70
 : (2.55...2.75)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.70...12.80

Del.quantity cm3/ : 22.2...22.4

100 s: (21.9...22.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 4.3...4.5

Del.quantity cm3/ : 2.7...3.3

100 s: (2.4...3.6)

Spread cm3 : 0.5

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 500

travel mm : 4.10...4.90

3rd speed rpm : 700

travel mm : 6.30...6.70

4th speed rpm : 950

travel mm : 6.30...6.70

5th speed rpm : 1100

travel mm : 7.00...7.50

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 222.0...224.0
1000 : (219.0...227.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 112...120

Testing:

1st rack travel in: 11.70
Speed rpm : 1130...1140
2nd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 63...71

Testing:

Speed rpm : 100
Minimum rack travel: 5.90
Speed rpm : 250
Rack travel in mm : 4.30...4.50

CONSTANT REGULATION

Speed rpm : 250...420

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 12.70...12.80

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.30...8.50
2nd pressure hPa : 700
Rack travel in m: 12.50...12.60
3rd pressure hPa : 120
Rack travel in m: 9.00...9.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm3/ : 131.0...133.0
1000 s: (128.0...136.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1130...1140

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 230.0...270.0
1000 s: (225.0...275.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.30...4.50
Del.quantity cm3/ : 27.0...33.0
1000 s: (24.0...36.0)
Spread cm3 : 5.00
1000 s: (7.00)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : UNI 13,8 c1
Edition : 12.04.90
Replaces : 29.3.89
Test oil : ISO-4113

Combination no. : 0 401 846 879

Injection pump
Pump designation : PE6P120A720RS3192
EP type number : 0 411 826 761
Governor
Governor design. : RQV300...900PA857-1
Governor no. : 0 421 813 683

Customer-spec. information
Customer : IVECO-UNIC

Engine : 8210.42.101

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.40...3.50
: (3.35...3.55)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 900
Rack travel in mm : 13.10...13.20
Del.quantity cm3/ : 23.9...24.1
100 s: (23.6...24.4)
Spread cm3 : 0.5
100 s: (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 4.9...5.1
Del.quantity cm3/ : 1.8...2.4
100 s: (1.5...2.7)
Spread cm3 : 0.8
100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 0.70...0.90
2nd speed rpm : 550
travel mm : 4.00...4.60
3rd speed rpm : 800
travel mm : 6.60...6.90
4th speed rpm : 900
travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 950
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 900
Aneroid pressure h: 900
Del.quantity : 239.0...241.0
1000 : (236.0...244.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 112...120

Testing:

1st rack travel in: 12.10

Speed rpm : 940...950

2nd rack travel in: 4.00

Speed rpm : 1060...1090

4th rack travel in: 1200

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 59...67

Testing:

Speed rpm : 100

Minimum rack travel: 6.50

Speed rpm : 300

Rack travel in mm : 4.90...5.10

CONSTANT REGULATION

Speed rpm : 370...490

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 900

Rack travel mm : 13.20...13.30

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 9.10...9.30

2nd pressure hPa : 520

Rack travel in m: 12.20...12.30

3rd pressure hPa : 330

Rack travel in m: 9.80...10.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

Speed rpm : 500

Del.quantity cm3/ : 232.0...238.0

1000 s: (229.0...241.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm3/ : 108.0...110.0

1000 s: (105.0...113.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.10

Speed rpm : 940...950

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 235.0...265.0

1000 s: (231.0...269.0)

LOW IDLE

Speed rpm : 300

Rack travel in mm : 4.90...5.10

Del.quantity cm3/ : 18.0...24.0

1000 s: (15.0...27.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 12,2 a1
Edition : 15.03.90
Replaces : -
Test oil : ISO-4113
Combination no. : 0 401 846 882A
Injection pump
Pump designation : PE6P120A320RS3206-1
EP type number : 0 411 826 775
Governor
Governor design. : RQ750PA783-1
Governor no. : 0 421 801 432

Customer-spec. information
Customer : PENTA

Engine : TAMD 122

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.40...12.50

Del.quantity cm3/ : 29.7...29.9

100 s: (29.4...30.2)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.1...5.3

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 297.0...299.0

1000 : (294.0...302.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 11.40

Speed rpm : 896...901

2nd rack travel in: 4.00

Speed rpm : 933...948

4th rack travel in: 1000

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.40

Speed rpm : 896...901

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 12,2 a2
 Edition : 15.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 882B
 Injection pump
 Pump designation : PE6P120A32ORS3206-1
 EP type number : 0 411 826 775
 Governor
 Governor design. : RQ750PA783-1
 Governor no. : 0 421 801 432

Customer-spec. information
 Customer : PENTA

Engine : TMD 122 A

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00

H27

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 24.3...24.5

100 s: (24.0...24.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.1...5.3

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 243.0...245.0

1000 : (240.0...248.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 9.70

Speed rpm : 747...752

2nd rack travel in: 4.00

Speed rpm : 777...792

4th rack travel in: 850

Speed rpm : 0.00...1.00

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.70

Speed rpm : 747...752

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 12,2 a3
 Edition : 15.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 882C
 Injection pump
 Pump designation : PE6P120A32ORS3206-1
 EP type number : 0 411 826 775
 Governor
 Governor design. : RQ750PA783-1
 Governor no. : 0 421 801 432

Customer-spec. information
 Customer : PENTA

Engine : TMD 122

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42
 Overflow valve : 1 417 413 025
 Inlet press., bar : 1.50
 Test nozzle holder
 assembly : 1 688 901 019
 Opening
 pressure, bar : 207...210
 Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness : 6.00X1.50X1000
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 24.3...24.5

100 s: (24.0...24.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 5.1...5.3
 Del.quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm3 : 0.4
 100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Del.quantity : 243.0...245.0
 1000 : (240.0...248.0)
 Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Testing:
 1st rack travel in: 9.70
 Speed rpm : 897...902
 2nd rack travel in: 4.00
 Speed rpm : 933...948
 4th rack travel in: 1000
 Speed rpm : 0.00...1.00

BREAKAWAY

1st version
 1mm rack travel less than

full load rack tr: 9.70
 Speed rpm : 897...902

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,3 a
Edition : 29.03.89
Replaces : 22.12.88
Test oil : ISO-4113

Combination no. : 0 401 846 893

Injection pump
Pump designation : PE6P110A72ORS3220
EP type number : 0 411 816 760
Governor
Governor design. : RGV250...1000PA904
Governor no. : 0 421 813 722

Customer-spec. information
Customer : RVI

Engine : BS 16 A

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
: (3.55...3.75)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.20...13.30

Del.quantity cm³/ : 12.9...13.2

100 s: (12.6...13.4)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 8.4...8.6

Del.quantity cm³/ : 1.8...2.3

100 s: (1.5...2.5)

Spread cm³ : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
travel mm : 1.00...1.40

2nd speed rpm : 750
travel mm : 5.20...5.80

3rd speed rpm : 1000
travel mm : 7.40...7.60

4th speed rpm : 1350
travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1

Speed rpm : 1080

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 900

Del.quantity : 129.0...132.0

1000 : (126.5...134.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever
position degrees: 118...126

Testing:
1st rack travel in: 12.20
Speed rpm : 1080...1090
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 68...76

Testing:
Speed rpm : 100
Minimum rack travel: 10.00
Speed rpm : 250
Rack travel in mm : 8.40...8.60

CONSTANT REGULATION
Speed rpm : 355...465

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.20...13.30

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.20...12.30
2nd pressure hPa : 365
Rack travel in m: 12.90...13.00
3rd pressure hPa : 295
Rack travel in m: 12.40...12.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm³/ : 134.0...138.0
1000 s: (131.0...141.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 108.0...111.0
1000 s: (105.5...113.5)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1080...1090

STARTING FUEL DELIVERY

Speed rpm : 100

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,2 a
Edition : 14.04.89
Replaces : 9.1.89
Test oil : ISO-4113

Combination no. : 0 401 846 898

Injection pump
Pump designation : PE6P120A32ORS3183-2
EP type number : 0 411 826 783
Governor
Governor design. : RQV250...1000PA851-3
Governor no. : 0 421 813 731

Customer-spec. information
Customer : DAF

Engine : HS 200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.40...10.50

Del.quantity cm3/ : 15.1...15.3

100 s: (14.8...15.6)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 225.0

Rack travel in mm : 5.8...6.2

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 225
travel mm : 0.40...0.80

2nd speed rpm : 400
travel mm : 2.10...2.50

3rd speed rpm : 800
travel mm : 4.70...5.10

4th speed rpm : 1250
travel mm : 8.30...8.70

5th speed rpm : 1350
travel mm : 9.20...9.80

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1225

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 151.0...153.0

1000 : (148.0...156.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 9.40
Speed rpm : 1240...1250
2nd rack travel in: 4.00
Speed rpm : 1310...1340
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack travel: 7.10
Speed rpm : 250
Rack travel in mm : 5.50...5.70

CONSTANT REGULATION
Speed rpm : 280...330

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 10.40...10.50

Measurement
Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.20
2nd pressure hPa : 385
Rack travel in m: 10.30...10.40

START CUT-OUT

Speed 1/min : 170 (0)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 600
Del. quantity cm³/ : 135.0...137.0
1000 s: (132.0...140.0)

BREAKAWAY

J06

1st version
1mm rack travel less than

full load rack tr: 9.40
Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del. quantity cm³/ : 260.0...300.0
1000 s: (256.0...304.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 p 1
Edition : 16.02.90
Replaces : 9.11.89
Test oil : ISO-4113

Combination no. : 0 401 846 899

Injection pump
Pump designation : PE6P110A72ORS3225
EP type number : 0 411 816 763
Governor
Governor design. : RQ250/1200PA913
Governor no. : 0 421 801 477

Customer-spec. information
Customer : DAF

Engine : HS 200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 12.4...12.6

100 s: (12.1...12.8)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.2...7.4

Del.quantity cm3/ : 1.4...1.9

100 s: (1.1...2.1)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 124.0...126.0

1000 : (121.5...128.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.50

Speed rpm : 1235...1250

2nd rack travel in: 4.00

Speed rpm : 1300...1330

4th rack travel in: 1450

Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250
Rack travel in mm : 5.3

Testing:

Speed rpm : 100
Minimum rack travel: 6.70
Speed rpm : 250
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 320...360

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.80...12.90
2nd speed rpm : 1200
Rack travel in m: 12.70...12.90

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.90...11.10
2nd pressure hPa : 360
Rack travel in m: 12.10...12.20
3rd pressure hPa : 270
Rack travel in m: 11.40...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del. quantity cm³/ : 87.0...89.0
1000 s: (84.5...91.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1235...1250

LOW IDLE

Speed rpm : 250

J08

Rack travel in mm : 5.20...5.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,2 b
Edition : 14.04.89
Replaces : 9.1.89
Test oil : ISO-4113

Combination no. : 0 401 846 899

Injection pump
Pump designation : PE6P120A320RS3183-2
EP type number : 0 411 826 783
Governor
Governor design. : RQ225/1200PA832-2
Governor no. : 0 421 801 465

Customer-spec. information
Customer : DAF

Engine : HS 200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.40...10.50

Del.quantity cm3/ : 15.1...15.3

100 s: (14.8...15.6)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 225.0

Rack travel in mm : 5.8...6.2

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 151.0...153.0

1000 : (148.0...156.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 9.30

Speed rpm : 1235...1250

2nd rack travel in: 4.00

Speed rpm : 1310...1340

4th rack travel in: 1400

Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 225
Rack travel in mm : 5.6

Testing:

Speed rpm : 100
Minimum rack trave: 7.10
Speed rpm : 225
Rack travel in mm : 5.50...5.70
Rack travel in mm : 2.00
Speed rpm : 375...415

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 10.40...10.50
2nd speed rpm : 1200
Rack travel in m: 10.30...10.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 10.40...10.50

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.10...10.20
2nd pressure hPa : 385
Rack travel in m: 10.30...10.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 135.0...137.0
1000 s: (132.0...140.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.30
Speed rpm : 1235...1250

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 8,3 p 5
Edition : 04.05.90
Replaces : 9.11.89
Test oil : ISO-4113

Combination no. : 0 401 846 905

Injection pump
Pump designation : PE6P110A72ORS3225Z
EP type number : 0 411 816 762
Governor
Governor design. : RQ250/1200PA913
Governor no. : 0 421 801 477

Customer-spec. information
Customer : DAF

Engine : HT 168

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.30...12.40

Del.quantity cm³/ : 12.0...12.2

100 s: (11.7...12.4)

Spread cm³ : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 7.2...7.4

Del.quantity cm³/ : 1.4...1.9

100 s: (1.1...2.1)

Spread cm³ : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 120.0...122.0

1000 : (117.5...124.5)

Spread cm³ : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.30

Speed rpm : 1235...1250

2nd rack travel in: 4.00

Speed rpm : 1320...1350

4th rack travel in: 1400

Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250
Rack travel in mm : 5.8

Testing:

Speed rpm : 100
Minimum rack trave: 8.00
Speed rpm : 250
Rack travel in mm : 5.70...5.90
Rack travel in mm : 2.00
Speed rpm : 320...360

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 12.60...12.70
2nd speed rpm : 1200
Rack travel in m: 12.50...12.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.30...12.40

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.80...10.90
2nd pressure hPa : 395
Rack travel in m: 12.00...12.10
3rd pressure hPa : 320
Rack travel in m: 11.50...11.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 83.5...85.5
1000 s: (81.0...88.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.30
Speed rpm : 1235...1250

LOW IDLE

Speed rpm : 250

Rack travel in mm : 5.70...5.90

Remarks:

:

Note remarks

Combination no. : 0 401 846 910

Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 7.5

Testing:

Speed rpm : 200

Minimum rack trave: 9.10

Speed rpm : 300

Rack travel in mm : 7.20...7.80

Rack travel in mm : 2.00

Speed rpm : 420...460

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600

Del.quantity cm3/ : 122.0...127.0

1000 s: (119.5...129.5)

Spread cm3 : 11.00

1000 s: (14.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 130.0...150.0

1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 12,9 a
 Edition : 05.03.90
 Replaces : 1.12.89
 Test oil : ISO-4113
 Combination no. : 0 401 846 915
 Injection pump
 Pump designation : PE6P120A32ORS3244
 EP type number : 0 411 826 788
 Governor
 Governor design. : RQV250...1050PA808-4
 Governor no. : 0 421 813 821

Customer-spec. information
 Customer : ENASA

Engine : 98 R1 AX

1st version kW : 331.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40
 : (3.25...3.45)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 13.10...13.20

Del.quantity cm³/ : 28.7...28.9

100 s: (28.4...29.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.9...6.1

Del.quantity cm³/ : 2.5...3.1

100 s: (2.2...3.4)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.40

2nd speed rpm : 350
 travel mm : 1.90...2.50

3rd speed rpm : 700
 travel mm : 4.50...5.10

4th speed rpm : 1095
 travel mm : 8.00...8.20

5th speed rpm : 1185
 travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1110

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1200

Del.quantity : 287.0...289.0
1000 : (284.0...292.0)
Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 12.10
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 250...430

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.10...13.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 10.70...11.10
2nd pressure hPa : 770
Rack travel in m: 12.60...12.70
3rd pressure hPa : 590
Rack travel in m: 11.70...11.90

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1030
Del.quantity cm3/ : 275.0...281.0
1000 s: (272.0...284.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 217.0...219.0
1000 s: (214.0...222.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.10
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...180.0
1000 s: (146.0...184.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 h
Edition : 05.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 846 916

Injection pump
Pump designation : PE6P120A32ORS3248
EP type number : 0 411 826 792
Governor
Governor design. : RQ250/1000PA832-3
Governor no. : 0 421 801 506

Customer-spec. information
Customer : DAF

Engine : WS 242

1st version kW : 242.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
x Wall thickness
x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30
: (4.15...4.35)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 20.9...21.1

100 s: (20.6...21.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.5...6.7

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 550

Rack travel in mm : 15.20...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 209.0...211.0

1000 : (206.0...214.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 550

Rack travel in mm : 15.8

Testing:

1st rack travel in: 11.50

Speed rpm : 1035...1050

2nd rack travel in: 4.00

Speed rpm : 1125...1155
4th rack travel in: 1250
Speed rpm : 0.00...1.40

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Minimum rack trave: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 335...375

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 13.10...13.20
2nd speed rpm : 1000
Rack travel in m: 13.00...13.20

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 1000
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.00...11.20
2nd pressure hPa : 340
Rack travel in m: 12.10...12.20
3rd pressure hPa : 250
Rack travel in m: 11.40...11.60

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600
Del.quantity cm3/ : 164.0...166.0
1000 s: (161.0...169.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1035...1050

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...300.0
1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.50...6.70
Del.quantity cm3/ : 14.0...20.0
1000 s: (11.0...23.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 h1
 Edition : 05.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 917
 Injection pump
 Pump designation : PE6P120A320RS3248
 EP type number : 0 411 826 792
 Governor
 Governor design. : RQV250...1000PA851-4
 Governor no. : 0 421 813 828

Customer-spec. information
 Customer : DAF

Engine : WS 242

1st version kW : 242.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter
 x Wall thickness
 x Length mm : 8.00X2.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30
 : (4.15...4.35)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 20.9...21.1

100 s: (20.6...21.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.5...6.7

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.40...1.60

2nd speed rpm : 400

travel mm : 3.20...3.60

3rd speed rpm : 800

travel mm : 5.80...6.20

4th speed rpm : 1000

travel mm : 7.90...8.10

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1025

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 1000

Del.quantity : 209.0...211.0

1000 : (206.0...214.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control Lever

position degrees: 117...125

Testing:

1st rack travel in: 11.50

Speed rpm : 1040...1050

2nd rack travel in: 4.00

Speed rpm : 1130...1160

4th rack travel in: 1250

Speed rpm : 0.00...1.40

LOW IDLE 1

Control lever

position degrees: 82...90

Testing:

Speed rpm : 100

Minimum rack travel: 7.50

Speed rpm : 250

Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 275...385

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 600

Pressure hPa : 1000

Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -

Rack travel in m: 11.00...11.20

2nd pressure hPa : 340

Rack travel in m: 12.10...12.20

3rd pressure hPa : 250

Rack travel in m: 11.40...11.60

START CUT-OUT

Speed 1/min : 200 (0)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 600

Del.quantity cm3/ : 164.0...166.0

1000 s: (161.0...169.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.50

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 260.0...300.0

1000 s: (256.0...304.0)

LOW IDLE

Speed rpm : 250

Rack travel in mm : 6.50...6.70

Del.quantity cm3/ : 14.0...20.0

1000 s: (11.0...23.0)

Spread cm3 : 8.00

1000 s: (12.00)

Remarks:

:

Note remarks

Combination no. : 0 401 846 918

Customer-spec. information
Customer : MERCEDES-BENZ

1st version kW : 160.0
Rated speed : 2100

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test Lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values

Test pressure, bar: 25...27

```
Prestroke mm      : 4.40...4.50
                  : (4.35...4.55)
Rack travel in mm : 9.00...12.00
Firing order      : 6- 3- 5- 2- 4- 1
```

Phasing : 0-60-120-180-240-300

Tolerance \pm ° : 0.50 (0.75)

Time to cyl. no. : 6

1st speed rpm : 1050

Rack travel in mm : 11.70...11.80

Del.quantity cm³/ : 12.2...12.4

100 s: (11.9...12.6)

Spread cm³ : 0.8

100 s: (1.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.8

Del.quantity cm3/ : 1.6...2.2
100 s: (1.3...2.4)

Spread cm3 : 0.6
100 s: (1.1)

(B) Setting of injection pump
with governor

```
1st speed      rpm      : 300
travel mm      : 1.00...1.40
```

2nd speed rpm : 500
travel mm : 3.20...3.80

```
3rd speed      rpm      : 850
  travel mm    : 6.00...6.40
```

```
4th speed      rpm      : 1100
travel mm      : 8.10...8.30
```

```
5th speed      rpm      : 1400
travel mm      : 11.00...12.00
```

Control-Lever position

Degree: -1

Speed rpm : 650
 Rack travel in mm : 13.10...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Del.quantity : 122.0...124.0
1000 : (119.5...126.5)
Spread cm³ : 8.50
1000 : (13.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 10.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1350
Speed rpm : 0.00...2.00

LOW IDLE 1
Control lever
position degrees: 85...93

Testing:
Speed rpm : 200
Minimum rack travel: 9.10
Speed rpm : 300
Rack travel in mm : 7.20...7.80
Rack travel in mm : 2.00
Speed rpm : 450...510

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm³/ : 122.0...127.0
1000 s: (119.5...129.5)
Spread cm³ : 11.00
1000 s: (14.)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 10,0 u2
 Edition : 06.04.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 921
 Injection pump
 Pump designation : PE6P110A32ORS3197
 EP type number : 0 411 816 752
 Governor
 Governor design. : RQV250...1100PA589
 Governor no. : 0 421 813 307

Customer-spec. information
 Customer : VOLVO-MUNKTELL

Engine : TD102 KF

1st version kW : 200.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 16.2...16.4

100 s: (15.9...16.7)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 4.3...4.5

Del.quantity cm3/ : 2.5...2.9

100 s: (2.2...3.2)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.20...1.30

2nd speed rpm : 350
 travel mm : 2.20...2.70

3rd speed rpm : 450
 travel mm : 3.70...4.10

4th speed rpm : 750
 travel mm : 6.40...6.60

5th speed rpm : 1160
 travel mm : 8.10...8.30

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1180

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1000

Del.quantity : 162.0...164.0

1000 : (159.0...167.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 10.70
Speed rpm : 1160...1170
2nd rack travel in: 4.00
Speed rpm : 1210...1240
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 60...68

Testing:
Speed rpm : 100
Minimum rack travel: 5.90
Speed rpm : 250
Rack travel in mm : 4.30...4.50

CONSTANT REGULATION
Speed rpm : 250...400

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.70...11.80

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.70...9.90
2nd pressure hPa : 390
Rack travel in m: 11.40...11.50
Rack travel in m: 10.10...10.30

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1000
Speed rpm : 1000
Del.quantity cm³/ : 146.0...150.0
1000 s: (143.0...153.0)
Aneroid pressure h: -
Speed rpm : 700

Del.quantity cm³/ : 127.0...129.0
1000 s: (124.0...132.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1160...1170

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 160.0...190.0
1000 s: (156.0...194.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.30...4.50
Del.quantity cm³/ : 25.0...29.0
1000 s: (22.0...32.0)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 11,9 e1
 Edition : 23.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 846 922
 Injection pump
 Pump designation : PE6P120A32ORS3176-3
 EP type number : 0 411 826 793
 Governor
 Governor design. : RQV250...1050PA808
 Governor no. : 0 421 813 553

Customer-spec. information
 Customer : ENASA

Engine : 96 R1 CX

1st version kW : 221.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
 : (3.75...3.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 19.6...19.8

100 s: (19.3...20.1)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.9...6.1

Del.quantity cm3/ : 2.5...3.1

100 s: (2.2...3.4)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.00...1.40

2nd speed rpm : 350

travel mm : 1.90...2.50

3rd speed rpm : 700

travel mm : 4.50...5.10

4th speed rpm : 1095

travel mm : 8.00...8.20

5th speed rpm : 1185

travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1110

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 900

Del.quantity : 196.0...198.0
1000 : (193.0...201.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 115...123

Testing:
1st rack travel in: 11.80
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 78...86

Testing:
Speed rpm : 100
Minimum rack travel: 7.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10

CONSTANT REGULATION
Speed rpm : 250...500

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.80...12.90

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.60...10.00
2nd pressure hPa : 500
Rack travel in m: 12.30...12.40
3rd pressure hPa : 190
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1030
Del.quantity cm³/ : 212.0...218.0
1000 s: (209.0...221.0)

Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 123.0...125.0
1000 s: (120.0...128.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.80
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 a 3
Edition : 24.02.89
Replaces : 5.84
Test oil : ISO-4113

Combination no. : 0 401 848 756

Injection pump
Pump designation : PE8P110A320LS3802-10
EP type number : 0 411 818 710
Governor
Governor design. : RQV300...1150PA486-3
Governor no. : 0 421 813 411

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 184.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 11.00...11.10

Del.quantity cm3/ : 11.2...11.6

100 s: (10.9...11.9)

Spread cm3 : 0.7

100 s: (1.0)

2nd speed rpm : 300.0
Rack travel in mm : 8.4...8.6
Del.quantity cm3/ : 1.4...2.0
100 s: (1.1...2.2)
Spread cm3 : 0.4
100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.60...1.80
2nd speed rpm : 800
travel mm : 5.80...6.20
3rd speed rpm : 1200
travel mm : 8.20...8.40
4th speed rpm : 1260
travel mm : 9.60...10.40

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1230
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Del.quantity : 112.0...116.0
1000 : (109.0...119.0)

Spread cm³ : 7.00
1000 : (10.00)

RATED SPEED

1st version

Control lever
position degrees: 50...58

Testing:

1st rack travel in: 10.00
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1240...1270
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 18...26

Testing:

Speed rpm : 100
Minimum rack travel: 9.70
Speed rpm : 300
Rack travel in mm : 8.00...8.20
Rack travel in mm : 2.00
Speed rpm : 410...480

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 11.00...11.10
2nd speed rpm : 600
Rack travel in m: 11.20...11.40

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm³/ : 92.0...96.0
1000 s: (89.0...99.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 12,8 a
Edition : 16.02.90
Replaces : 24.11.89
Test oil : ISO-4113

Combination no. : 0 401 848 780

Injection pump
Pump designation : PE8P120A920/5LS3174
EP type number : 0 411 828 719
Governor
Governor design. : RQV300...1150PA802
Governor no. : 0 421 813 538

Customer-spec. information
Customer : KHD

Engine : BF8L513C

1st version kW : 265.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 15.00...19.00
Firing order : 1- 8- 7- 2- 6- 5-
4- 3

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 13.20...13.30

Del.quantity cm3/ : 16.6...16.8

100 s: (16.3...17.1)

Spread cm3 : 0.6

100 s: (1.0)

2nd speed rpm : 300.0

Rack travel in mm : 7.6...7.8

Del.quantity cm3/ : 2.0...2.6

100 s: (1.7...2.9)

Spread cm3 : 0.9

100 s: (1.3)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.40

2nd speed rpm : 400

travel mm : 2.20...2.80

3rd speed rpm : 550

travel mm : 3.50...4.10

4th speed rpm : 1200

travel mm : 8.20...8.40

5th speed rpm : 1285

travel mm : 9.00...9.40

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1220

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 900
Del.quantity : 166.0...168.0
1000 : (163.0...171.0)
Spread cm3 : 6.00
1000 : (10.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 12.20
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1310...1340
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 81...89

Testing:
Speed rpm : 100
Minimum rack travel: 9.20
Speed rpm : 300
Rack travel in mm : 7.60...7.80

CONSTANT REGULATION
Speed rpm : 300...510

TORQUE CONTROL
Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 13.20...13.30
2nd speed rpm : 700
Rack travel in m: 13.50...13.70

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.40...13.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 12.80...13.00
2nd pressure hPa : 500
Rack travel in m: 13.10...13.20

START CUT-OUT

K02

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 700
Del.quantity cm3/ : 167.0...171.0
1000 s: (164.0...174.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...190.0

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

APPLICATION

Special-purpose vehicle

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 L
Edition : 15.08.89
Replaces : 29.4.88
Test oil : ISO-4113

Combination no. : 0 401 848 798

Injection pump
Pump designation : PE8P110A320LS3846
EP type number : 0 411 818 717
Governor
Governor design. : RQ300/1050PA187-21
Governor no. : 0 421 801 438

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
: (4.35...4.55)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)
Time to cyl. no. : 8

BASIC SETTING

1st speed	rpm	: 1050
Rack travel in mm		: 13.00...13.10
Del.quantity cm3/		: 12.8...13.0
	100 s:	(12.5...13.2)
Spread	cm3	: 0.6
	100 s:	(0.9)
2nd speed	rpm	: 300.0
Rack travel in mm		: 7.4...8.0
Del.quantity cm3/		: 1.6...2.2
	100 s:	(1.3...2.4)
Spread	cm3	: 0.5
	100 s:	(0.8)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 650
Rack travel in mm : 13.80...14.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version		
Speed	rpm	: 1050
Del.quantity		: 128.0...130.0
	1000	: (125.5...132.5)
Spread	cm3	: 6.0
	1000	: (9.5)

RATED SPEED

1st version
Setting point:
Speed rpm : 650
Rack travel in mm : 14.2

Testing:

1st rack travel in: 12.00
Speed rpm : 1095...1110
2nd rack travel in: 4.00
Speed rpm : 1155...1185
4th rack travel in: 1300
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.60

Testing:

Speed rpm : 200
Minimum rack trave: 9.50
Speed rpm : 300
Rack travel in mm : 7.40...8.00
Rack travel in mm : 2.00
Speed rpm : 400...460

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 128.0...134.0
1000 s: (125.0...137.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 L 1
Edition : 15.08.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 798

Injection pump
Pump designation : PE8P110A320LS3846-1
EP type number : 0 411 818 719
Governor
Governor design. : RQ300/1050PA187-25
Governor no. : 0 421 801 482

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
: (4.35...4.55)

Rack travel in mm : 9.00...12.00

Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.70...11.80

Del.quantity cm³/ : 12.0...12.2

100 s: (11.8...12.5)

Spread cm³ : 0.8

100 s: (1.2)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.6

100 s: (0.9)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.10...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 120.0...122.0

1000 : (118.0...125.0)

Spread cm³ : 8.50

1000 : (12.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 13.5

Testing:

1st rack travel in: 10.70

Speed rpm : 1090...1100

2nd rack travel in: 4.00

Speed rpm : 1180...1210

4th rack travel in: 1300

Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 7.60

Testing:

Speed rpm : 200

Minimum rack trave: 9.10

Speed rpm : 300

Rack travel in mm : 7.20...7.80

Rack travel in mm : 2.00

Speed rpm : 420...460

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70

Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 140.0...160.0

1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 d 8
Edition : 12.01.90
Replaces : 28.6.89
Test oil : ISO-4113

Combination no. : 0 401 848 804

Injection pump
Pump designation : PE8P110A320LS3842-1
EP type number : 0 411 818 716
Governor
Governor design. : RQV350..1050PA378-7
Governor no. : 0 421 813 714

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 12.70...12.80

Del.quantity cm3/ : 13.7...13.9

100 s: (13.4...14.1)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 350.0
Rack travel in mm : 8.0...8.3
Del.quantity cm3/ : 1.5...2.1
100 s: (1.2...2.3)
Spread cm3 : 0.4
100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.50...1.70
2nd speed rpm : 800
travel mm : 4.90...5.30
3rd speed rpm : 1100
travel mm : 7.90...8.50
4th speed rpm : 1150
travel mm : 8.90...9.70

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1110
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Del.quantity : 137.0...139.0
1000 : (134.5...141.5)

Spread cm3 : 4.00
1000 : (7.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:

1st rack travel in: 11.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1140...1170
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 66...74

Testing:

Speed rpm : 250
Minimum rack travel: 9.50
Speed rpm : 350
Rack travel in mm : 8.00...8.30

CONSTANT REGULATION

Speed rpm : 350...450

START CUT-OUT

Speed 1/min : 270 (290)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 124.0...128.0
1000 s: (121.0...131.0)
Spread cm3 : 5.00
1000 s: (8.00)
Speed rpm : 1050
Del.quantity cm3/ : 87.0...89.0 *
1000 s: (84.0...92.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 L 2
Edition : 12.04.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 805

Injection pump
Pump designation : PE8P110A32OLS3846-1
EP type number : 0 411 818 719
Governor
Governor design. : RQ300/1050PA187-27
Governor no. : 0 421 801 488

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM442

1st version kW : 195.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 10.90...11.00

Del.quantity cm3/ : 11.1...11.3

100 s: (10.8...11.5)

Spread cm3 : 0.8

100 s: (1.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.0...7.6

Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm3 : 0.6

100 s: (1.1)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.10...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 111.0...113.0

1000 : (108.5...115.5)

Spread cm3 : 8.50

1000 : (13.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 13.5

Testing:

1st rack travel in: 9.90
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1300
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.3

Testing:

Speed rpm : 200
Minimum rack travel: 9.20
Speed rpm : 300
Rack travel in mm : 7.00...7.60
Rack travel in mm : 2.00
Speed rpm : 400...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 105.0...111.0
1000 s: (102.5...113.5)
Spread cm3 : 11.00
1000 s: (14.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.90
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 L 3
Edition : 02.01.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 806

Injection pump
Pump designation : PE8P110A320LS3846-1
EP type number : 0 411 818 719
Governor
Governor design. : RQ300/1050PA187-28
Governor no. : 0 421 801 492

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test Lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050
Rack travel in mm : 11.70...11.80
Del.quantity cm3/ : 12.2...12.4
 100 s: (11.9...12.6)
Spread cm3 : 0.8
 100 s: (1.3)
2nd speed rpm : 300.0
Rack travel in mm : 7.2...7.8
Del.quantity cm3/ : 1.6...2.2
 100 s: (1.3...2.4)
Spread cm3 : 0.6
 100 s: (1.1)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 650
Rack travel in mm : 13.10...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Del.quantity : 122.0...124.0
 1000 : (119.5...126.5)
Spread cm3 : 8.50
 1000 : (13.00)

RATED SPEED

1st version
Setting point:
Speed rpm : 650
Rack travel in mm : 13.5

Testing:

1st rack travel in: 10.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 7.5

Testing:

Speed rpm : 200
Minimum rack trave: 9.10
Speed rpm : 300
Rack travel in mm : 7.20...7.80
Rack travel in mm : 2.00
Speed rpm : 420...460

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 122.0...127.0
1000 s: (119.5...129.5)
Spread cm3 : 11.00
1000 s: (14.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 r
Edition : 12.04.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 808

Injection pump
Pump designation : PE8P110A320LS3846-1
EP type number : 0 411 818 719
Governor
Governor design. : RQV300...1050PA884-5
Governor no. : 0 421 813 831

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
(4.35...4.55)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed	rpm	: 1050
Rack travel in mm		: 11.70...11.80
Del. quantity cm ³ /		: 12.2...12.4
	100 s:	(11.9...12.6)
Spread	cm ³	: 0.8
	100 s:	(1.3)
2nd speed	rpm	: 300.0
Rack travel in mm		: 7.2...7.8
Del. quantity cm ³ /		: 1.6...2.2
	100 s:	(1.3...2.4)
Spread	cm ³	: 0.6
	100 s:	(1.1)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed	rpm	: 300
travel mm		: 1.00...1.40
2nd speed	rpm	: 500
travel mm		: 3.20...3.80
3rd speed	rpm	: 850
travel mm		: 6.00...6.40
4th speed	rpm	: 1100
travel mm		: 8.10...8.30
5th speed	rpm	: 1400
travel mm		: 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 650
Rack travel in mm : 13.10...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

Remarks:

:

1st version
Speed rpm : 1050
Del.quantity : 122.0...124.0
1000 : (119.5...126.5)
Spread cm3 : 8.50
1000 : (13.00)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 10.70
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1350
Speed rpm : 0.00...2.00

LOW IDLE 1
Control lever
position degrees: 85...93

Testing:
Speed rpm : 200
Minimum rack trave: 9.10
Speed rpm : 300
Rack travel in mm : 7.20...7.80
Rack travel in mm : 2.00
Speed rpm : 450...510

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 122.0...127.0
1000 s: (119.5...129.5)
Spread cm3 : 11.00
1000 s: (14.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 r 1
Edition : 12.04.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 848 810

Injection pump
Pump designation : PE8P110A320LS3846-1
EP type number : 0 411 818 719
Governor
Governor design. : RQV300...1050PA884-7
Governor no. : 0 421 813 859

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM442

1st version kW : 195.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.00X2.00X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.40...4.50
 : (4.35...4.55)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 10.90...11.00

Del.quantity cm³/ : 11.1...11.3

100 s: (10.8...11.5)

Spread cm³ : 0.8

100 s: (1.3)

2nd speed rpm : 300.0

Rack travel in mm : 7.2...7.8

Del.quantity cm³/ : 1.6...2.2

100 s: (1.3...2.4)

Spread cm³ : 0.6

100 s: (1.1)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.00...1.40

2nd speed rpm : 500
travel mm : 3.20...3.80

3rd speed rpm : 850
travel mm : 6.00...6.40

4th speed rpm : 1100
travel mm : 8.10...8.30

5th speed rpm : 1400
travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.10...13.90

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Del.quantity : 111.0...113.0
1000 : (108.5...115.5)
Spread cm³ : 8.50
1000 : (13.00)

RATED SPEED

1st version
Control lever
position degrees: 104...112

Testing:
1st rack travel in: 9.90
Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1350
Speed rpm : 0.00...2.00

LOW IDLE 1
Control lever
position degrees: 85...93

Testing:
Speed rpm : 200
Minimum rack trave: 9.10
Speed rpm : 300
Rack travel in mm : 7.20...7.80
Rack travel in mm : 2.00
Speed rpm : 450...510

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 9.90
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 c 8
 Edition : 06.04.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 848 812
 Injection pump
 Pump designation : PE8P110A320LS3842
 EP type number : 0 411 818 714
 Governor
 Governor design. : RQ300/1050PA187-29
 Governor no. : 0 421 801 527

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM442

1st version kW : 206.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
 Rack travel in mm : 9.00...12.00
 Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
 Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 11.80...11.90

Del.quantity cm3/ : 12.4...12.6

100 s: (12.1...12.8)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 8.2...8.5

Del.quantity cm3/ : 1.5...2.1

100 s: (1.2...2.3)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 650

Rack travel in mm : 13.60...14.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1050

Del.quantity : 124.0...126.0

1000 : (121.5...128.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 14.0

Testing:

1st rack travel in: 10.80

Speed rpm : 1090...1100
2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1350
Speed rpm : 0.00...2.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 300

Rack travel in mm : 6.9

Testing:

Speed rpm : 200

Minimum rack trave: 9.00

Speed rpm : 300

Rack travel in mm : 6.80...7.00

Rack travel in mm : 2.00

Speed rpm : 400...440

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750

Del.quantity cm3/ : 109.0...112.0
1000 s: (106.0...115.0)

Spread cm3 : 7.00
1000 s: (10.0)

RACK STOP ADJUSTMENT

Speed rpm : 600

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.80

Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

- 6- 3- 5- 2

Note remarks

Test sheet : MB 18,3 b
Edition : 06.04.90
Replaces : 8.81
Test oil : ISO-4113

Combination no. : 0 401 849 701

Injection pump
Pump designation : PE10P110A320LS3808
EP type number : 0 411 819 700
Governor
Governor design. : RQV300...1150PA524-2
Governor no. : 0 421 813 264

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM 423

1st version kW : 259.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7

Phasing : 0-45-72-117-144-189-
216-261-288-333
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1150
Rack travel in mm : 12.20...12.30
Del.quantity cm3/ : 12.3...12.5
100 s : (12.0...12.8)
Spread cm3 : 0.4
100 s : (0.8)

2nd speed rpm : 300.0
Rack travel in mm : 8.3...8.6
Del.quantity cm3/ : 1.6...2.2
100 s : (1.3...2.5)
Spread cm3 : 0.4
100 s : (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1230
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Del.quantity : 123.0...125.0
1000 : (120.0...128.0)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 50...58

Testing:
1st rack travel in: 11.20
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1245...1275
4th rack travel in: 1300
Speed rpm : 0.00...0.50

LOW IDLE 1

Control lever
position degrees: 18...26

Testing:

Speed rpm : 100
Minimum rack trave: 10.10
Speed rpm : 300
Rack travel in mm : 8.30...8.60

CONSTANT REGULATION

Speed rpm : 330...465

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm³/ : 115.0...119.0
1000 s: (112.0...122.0)
Spread cm³ : 6.00
1000 s: (9.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.20
Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 16,0 d2
Edition : 16.02.90
Replaces : 24.7.87
Test oil : ISO-4113

Combination no. : 0 401 849 740

Injection pump
Pump designation : PE10P110A920/5LS3164
EP type number : 0 411 819 708
Governor
Governor design. : RGV300...1150PA549-3
Governor no. : 0 421 813 664

Customer-spec. information
Customer : KHD

Engine : BF10L513

1st version kW : 294.0
Rated speed : 2300

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
5- 8- 7- 2

Phasing : 0-27-72-99-144-171-
216-243-288-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 12.80...12.90

Del.quantity cm3/ : 14.8...15.0

100 s: (14.5...15.3)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0
Rack travel in mm : 7.5...7.7
Del.quantity cm3/ : 1.2...1.7
100 s: (1.0...2.0)
Spread cm3 : 0.4
100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.00...1.40
2nd speed rpm : 450
travel mm : 2.60...3.20
3rd speed rpm : 700
travel mm : 4.40...5.00
4th speed rpm : 1195
travel mm : 8.10...8.30
5th speed rpm : 1310
travel mm : 9.20...9.60

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1220
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1150
Aneroid pressure h: 1200
Del.quantity : 148.5...150.5
1000 : (145.0...153.0)

Spread cm³ : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 11.80
Speed rpm : 1195...1205
2nd rack travel in: 4.00
Speed rpm : 1295...1325
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 71...79

Testing:
Speed rpm : 100
Minimum rack travel: 9.00
Speed rpm : 300
Rack travel in mm : 7.50...7.70

CONSTANT REGULATION
Speed rpm : 300...530

TORQUE CONTROL
Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 12.80...12.90
2nd speed rpm : 650
Rack travel in m: 13.20...13.30
3rd speed rpm : 840
Rack travel in m: 13.10...13.30
4th speed rpm : 1010
Rack travel in m: 12.90...13.10

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 450
Pressure hPa : 1200
Rack travel mm : 13.20...13.30

Measurement
Speed 1/min : 450

1st pressure hPa : -
Rack travel in m: 11.80...12.00
2nd pressure hPa : 850
Rack travel in m: 12.75...12.85
3rd pressure hPa : 650

Rack travel in m: 12.00...12.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 650
Del.quantity cm³/ : 154.0...158.0
1000 s: (151.0...161.0)
Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm³/ : 118.5...121.5
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.80
Speed rpm : 1195...1205

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...165.0
1000 s: (131.0...169.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.50...7.70
Del.quantity cm³/ : 12.5...17.5
1000 s: (10.0...20.0)
Spread cm³ : 4.50
1000 s: (7.50)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 18,2 f2
Edition : 19.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 849 744B

Injection pump
Pump designation : PE10P120A520/4LS3849
EP type number : 0 411 829 708
Governor
Governor design. : RQ1050PA663-7
Governor no. : 0 421 801 331

Cust. part no. : 2-7977

Customer-spec. information
Customer : MAN

Engine : D2840 LE

1st version kW : 352.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

K23

Test pressure, bar: 25...27

Prestroke mm : 4.20...4.30
: (4.15...4.35)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7
- 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
216-261-288-333

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.30...11.40

Del.quantity cm3/ : 19.4...19.6

100 s: (19.1...19.9)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.3...4.7

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 194.0...196.0

1000 : (191.0...199.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Testing:

1st rack travel in: 10.30

Speed rpm : 1050...1055

2nd rack travel in: 4.00

Speed rpm : 1090...1105

4th rack travel in: 1150

Speed rpm : 0.00...1.00

STARTING FUEL DELIVERY

Speed rpm : 100

Remarks: :

APPLICATION

Generator set



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 18,2 i
Edition : 30.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 849 745

Injection pump
Pump designation : PE10P120A520/4LS3855
EP type number : 0 411 829 709
Governor
Governor design. : RQ300/1000PA837
Governor no. : 0 421 801 372

Customer-spec. information
Customer : MAN

Engine : D2840LF/460

1st version kW : 338.0
Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.90...4.00
: (3.85...4.05)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7
- 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
216-261-288-333
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 10.50...10.60

Del.quantity cm3/ : 20.4...20.6

100 s: (20.1...20.9)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 5.2...5.4

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 1000

Del.quantity : 204.0...206.0

1000 : (201.0...209.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.50
Speed rpm : 1045...1060
2nd rack travel in: 4.00
Speed rpm : 1125...1155
4th rack travel in: 1250
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 5.3

Testing:
Speed rpm : 100
Minimum rack travel: 6.80
Speed rpm : 300
Rack travel in mm : 5.20...5.40
Rack travel in mm : 2.00
Speed rpm : 365...405

TORQUE CONTROL
Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 11.00...11.10
2nd speed rpm : 600
Rack travel in m: 11.00...11.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 10.50...10.60

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.20...9.40
2nd pressure hPa : 380
Rack travel in m: 9.60...9.70
3rd pressure hPa : 500
Rack travel in m: 10.10...10.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 144.0...146.0
1000 s: (141.0...149.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1045...1060

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.20...5.40
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN - NR. 2-7778

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : KHD 16,0 d5
Edition : 16.02.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 849 747

Injection pump
Pump designation : PE10P110A920/5LS3164
EP type number : 0 411 819 708
Governor
Governor design. : RQV300...1075PA821-1
Governor no. : 0 421 813 837

Customer-spec. information
Customer : KHD

Engine : BF10L513 ECE

1st version kw : 278.0
Rated speed : 2150

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

Firing order : 1- 10- 9- 4- 3- 6-
5- 8- 7- 2

Phasing : 0-27-72-99-144-171-2
16-243-288-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1075

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 14.2...14.4

100 s: (13.9...14.7)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0

Rack travel in mm : 7.0...7.2

Del.quantity cm3/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm3 : 0.4

100 s: (0.7)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
travel mm : 1.00...1.40

2nd speed rpm : 450
travel mm : 3.00...3.50

3rd speed rpm : 800
travel mm : 5.00...5.50

4th speed rpm : 1120
travel mm : 8.40...8.60

5th speed rpm : 1210
travel mm : 9.60...10.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1120

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1075

Aneroid pressure h: 900

Del.quantity : 142.0...144.0

1000 : (139.0...147.0)

Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 117...125

Testing:
1st rack travel in: 11.00
Speed rpm : 1115...1125
2nd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 83...91

Testing:
Speed rpm : 100
Minimum rack travel: 10.50
Speed rpm : 300
Rack travel in mm : 7.00...7.20

CONSTANT REGULATION
Speed rpm : 300...550

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 12.00...12.10

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 11.20...11.40
2nd pressure hPa : 430
Rack travel in m: 11.80...11.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 800
Del.quantity cm3/ : 143.0...147.0
1000 s: (141.0...149.0)

Aneroid pressure h: -
Speed rpm : 450
Del.quantity cm3/ : 117.0...119.0
1000 s: (114.0...122.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.00
Speed rpm : 1115...1125

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...165.0
1000 s: (131.0...169.0)

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : WAU 1 a 1
 Edition : 14.02.1990
 Replaces : -
 Test oil : ISO-4113

Combination no. : 0 401 876 098

Injection pump
 Pump designation : PE6P130A420LS67
 Governor
 Governor design. : RSV300...900P4/308DR

Customer-spec. information
 Customer : WAUKESHA

Engine : F-1197 D

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 35...45

Inlet press., bar : 1.5

Test nozzle holder
 assembly : 0 681 443 022

Opening
 pressure, bar : 172...175

Test Lines : 1 680 750 026

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.0...2.1
 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.5 (0.75)

BASIC SETTING

1st speed rpm : 800

Rack travel in mm : 9.00

Del.quantity cm3/ : 20.7...21.4

100 s: (-)

Spread cm3 : 0.8

100 s: (-)

2nd speed rpm : 600
 Rack travel in mm : 12.00
 Del.quantity cm3/ : 28.3...30.1
 100 s: (-)

3rd speed rpm : 200
 Rack travel in mm : 6.00
 Del.quantity cm3/ : 4.6...6.3
 100 s: (-)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...1.40

Governor spring pre-tension
 Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 900
 Del.quantity : 225.0...229.0
 1000 : (-)

RATED SPEED

1st version
 Control lever
 position degrees: 48...56

Testing:
 1st rack travel in: 16.00
 Speed rpm : 890...910
 2nd rack travel in: 11.00
 Speed rpm : 925...955
 3rd rack travel in: 3.00...5.00
 Speed rpm : 985...1015
 4th rack travel in: 1100
 Speed rpm : 0.0...1.00

LOW IDLE 1

Control lever
 position degrees: 20...28
 Setting point w/out bumper spring
 Speed rpm : 300
 Rack travel in mm : 6.00

Testing:
 Speed rpm : 100

Minimum rack trave: 19.00
Speed rpm : 300
Rack travel in mm : 5.70...6.30
Rack travel in mm : 3.70
Speed rpm : 400
Speed rpm : 360
Maximum rack trave: 1.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 880
Rack travel in m: -
2nd speed rpm : 600
Rack travel in m: -
3rd speed rpm : 500
Rack travel in m: 0.10...0.30
4th speed rpm : 360
Rack travel in m: 0.40...0.60

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 234.0...240.0
1000 s: (-)
Speed rpm : 500
Del.quantity cm3/ : 226.0...232.0
1000 s: (-)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: ?
Speed rpm : 920

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 589.0...591.0
1000 s: (-)

HIGH IDLE

1st version

Speed rpm : 970
Del.quantity cm3/ : 28.0...38.0
1000 s: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,6 o7
 Edition : 04.05.90
 Replaces : 12.9.86
 Test oil : ISO-4113

Combination no. : 0 401 876 295

Injection pump
 Pump designation : PE6P120A320RS415-1
 EP type number : 0 411 826 123
 Governor
 Governor design. : RSV250...1000P5A508-1
 Governor no. : 0 421 833 194

Customer-spec. information
 Customer : DAF

Engine : DKZ 1160

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 850

Rack travel in mm : 12.50...12.60

Del.quantity cm³/ : 20.6...20.8

100 s: (20.3...21.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.7...6.9

Del.quantity cm³/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.75

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 850

Aneroid pressure h: 700

Del.quantity : 206.0...208.0

1000 : (203.0...211.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 45...53

Testing:

1st rack travel in: 11.50

Speed rpm : 1035...1045

2nd rack travel in: 4.00

Speed rpm : 1115...1145

3rd rack travel in: 4.00
Speed rpm : 1180...1220
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Speed rpm : 250
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 630...690

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 850
Rack travel in m: 12.70...12.80
2nd speed rpm : 400
Rack travel in m: 12.70...12.90
3rd speed rpm : 300
Rack travel in m: 13.00...13.50

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 10.30...10.50
2nd pressure hPa : 340
Rack travel in m: 11.80...11.90
3rd pressure hPa : 260
Rack travel in m: 10.60...11.00

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm³/ : 140.0...142.0
1000 s: (137.0...145.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1035...1045

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 305.0...345.0
1000 s: (301.0...349.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.40...6.60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 6,1 q
Edition : 12.01.90
Replaces : 10.2.89
Test oil : ISO-4113

Combination no. : 0 401 876 327

Injection pump
Pump designation : PE6P110A320RS499
EP type number : 0 411 816 169
Governor
Governor design. : RSV325...1400P2A374-
3
Governor no. : 0 421 833 220

Customer-spec. information
Customer : VOLVO-PENTA

Engine : TAMD61A

1st version kW : 220.0
Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.50...2.60
: (2.45...2.65)

Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 12.0...12.2
100 s: (11.7...12.5)

Spread cm3 : 0.4
100 s: (0.7)

2nd speed rpm : 325.0
Rack travel in mm : 4.1...4.3
Del.quantity cm3/ : 1.1...1.5
100 s: (0.9...1.7)

Spread cm3 : 0.3
100 s: (0.6)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension
Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1000
Aneroid pressure h: 900
Del.quantity : 120.5...122.5
1000 : (117.5...125.5)

Spread cm3 : 4.00
1000 : (7.50)

RATED SPEED

1st version
Control lever
position degrees: 114...122

Testing:
1st rack travel in: 10.10
Speed rpm : 1450...1460

2nd rack travel in: 4.00
Speed rpm : 1530...1560
4th rack travel in: 1630
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 75...83
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 3.7
Speed rpm : 325
Rack travel in mm : 4.10...4.30
Rack travel in mm : 2.00
Speed rpm : 440...500

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.00...11.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 360
Rack travel in m: 8.70...8.80
3rd pressure hPa : 730
Rack travel in m: 10.60...10.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900
Speed rpm : 1400
Del.quantity cm3/ : 122.5...126.5
1000 s: (119.5...129.5)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 54.5...58.5
1000 s: (51.5...61.5)

BREAKAWAY

1st version

1mm rack travel less than
full load rack tr: 10.10
Speed rpm : 1450...1460

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...165.0

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.10...4.30
Del.quantity cm3/ : 11.0...15.0
1000 s: (9.0...17.0)
Spread
cm3 : 3.00
1000 s: (6.00)

Remarks:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 f
 Edition : 30.03.90
 Replaces : 13.12.89
 Test oil : ISO-4113

Combination no. : 0 401 876 332

Injection pump
 Pump designation : PE6P100A820LS130
 EP type number : 0 411 806 179
 Governor
 Governor design. : RSV250...1000P1A532
 Governor no. : 0 421 833 273

Customer-spec. information
 Customer : ENASA

Engine : 9105.42.25.21

1st version kW : 113.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.90...12.00

Del.quantity cm3/ : 11.3...11.5

100 s: (11.1...11.7)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 250.0

Rack travel in mm : 7.9...8.1

Del.quantity cm3/ : 1.8...2.2

100 s: (1.5...2.4)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Del.quantity : 113.0...115.0

1000 : (111.0...117.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 84...92

Testing:

1st rack travel in: 10.90

Speed rpm : 790...800

2nd rack travel in: 4.00

Speed rpm : 815...845

3rd rack travel in: 4.00
Speed rpm : 815...845
4th rack travel in: 1000
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 63...71
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 330...390

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 11.90...12.00
2nd speed rpm : 450
Rack travel in m: 11.90...12.10
3rd speed rpm : 300
Rack travel in m: 13.20...13.80

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.90
Speed rpm : 790...800

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 260.0...280.0
1000 s: (256.0...284.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 f
 Edition : 30.03.90
 Replaces : 16.6.88
 Test oil : ISO-4113

Combination no. : 0 401 876 335

Injection pump
 Pump designation : PE6P120A32ORS415-1
 EP type number : 0 411 826 123
 Governor
 Governor design. : RSV250...1100P5A508-8
 Governor no. : 0 421 833 298

Customer-spec. information
 Customer : DAF

Engine : DKV 1160

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 17.1...17.3
 100 s: (16.8...17.6)

Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 6.7...6.9
 Del.quantity cm3/ : 1.4...2.0
 100 s: (1.1...2.3)

Spread cm3 : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 650
 Aneroid pressure h: 700
 Del.quantity : 171.0...173.0
 1000 : (168.0...176.0)

Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Control lever
 position degrees: 95...103

Testing:
 1st rack travel in: 9.10
 Speed rpm : 1135...1145
 2nd rack travel in: 4.00
 Speed rpm : 1175...1205

3rd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1375
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.8

Testing:

Speed rpm : 100
Speed rpm : 250
Rack travel in mm : 6.20...6.40
Rack travel in mm : 2.00
Speed rpm : 630...730

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 650
Rack travel in m: 11.40...11.50
2nd speed rpm : 1090
Rack travel in m: 10.10...10.30
3rd speed rpm : 800
Rack travel in m: 10.80...11.00
4th speed rpm : 850
Rack travel in m: 10.40...10.70

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.10...11.20

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 9.50...9.70
2nd pressure hPa : 290
Rack travel in m: 10.70...10.90
3rd pressure hPa : 260
Rack travel in m: 10.20...10.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1090
Del.quantity cm³/ : 158.0...162.0
1000 s: (155.0...165.0)
Aneroid pressure h: -
Speed rpm : 600

Del.quantity cm³/ : 129.0...131.0
1000 s: (126.0...134.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1135...1145

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 310.0...350.0
1000 s: (306.0...354.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.20...6.40

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 g
Edition : 16.02.90
Replaces : 9.11.89
Test oil : ISO-4113

Combination no. : 0 401 876 336

Injection pump
Pump designation : PE6P120A320RS415-1
EP type number : 0 411 826 123
Governor
Governor design. : RSV250...1050P5A539
Governor no. : 0 421 833 299

Customer-spec. information
Customer : DAF

Engine : KT 191

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 10.80...10.90

Del.quantity cm3/ : 16.1...16.3

100 s: (15.8...16.6)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 6.4...6.8

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 700

Del.quantity : 161.0...163.0

1000 : (158.0...166.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 96...104

Testing:

1st rack travel in: 9.20

Speed rpm : 1085...1095

2nd rack travel in: 4.00

Speed rpm : 1125...1155

3rd rack travel in: 4.00

Speed rpm : 1150...1180
4th rack travel in: 1320
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.8
Speed rpm : 250
Rack travel in mm : 6.20...6.40
Rack travel in mm : 2.00
Speed rpm : 630...730

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1040
Rack travel in m: 10.20...10.40
2nd speed rpm : 650
Rack travel in m: 11.10...11.20
3rd speed rpm : 805
Rack travel in m: 10.80...11.00
4th speed rpm : 850
Rack travel in m: 10.50...10.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 10.80...10.90

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 9.50...9.70
2nd pressure hPa : 310
Rack travel in m: 10.40...10.50
3rd pressure hPa : 250
Rack travel in m: 9.80...10.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1040
Del.quantity cm3/ : 160.0...164.0
1000 s: (157.0...167.0)
Aneroid pressure h: -
Speed rpm : 600
Del.quantity cm3/ : 130.0...132.0
1000 s: (127.0...135.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 9.20
Speed rpm : 1085...1095

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 300.0...340.0
1000 s: (296.0...344.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.20...6.40

Remarks:

Check electrically unlatched starting
fuel delivery (EES) with 24 volt.

On activation of the starting solenoid,
the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : IFS 23,1 d
Edition : 15.03.90
Replaces : 15.8.89
Test oil : ISO-4113

Combination no. : 0 401 876 337

Injection pump
Pump designation : PE6P130A320S521
EP type number : 0 411 836 044
Governor
Governor design. : RSV350...1500POA524
Governor no. : 0 421 833 256

Customer-spec. information
Customer : ISOTTA

Engine : ID38 SS-6V

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 18.00...21.00

Firing order : 1- 2- 3- 4- 5- 6

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1500

Rack travel in mm : 12.50...12.60

Del.quantity cm3/ : 23.9...24.2

100 s: (23.5...24.5)

Spread cm3 : 0.6

100 s: (1.0)

2nd speed rpm : 500.0

Rack travel in mm : 8.2...8.4

Del.quantity cm3/ : 9.6...10.2

100 s: (9.2...10.6)

Spread cm3 : 1.0

100 s: (1.4)

3rd speed rpm : 500

Rack travel in mm : <6.60

Del.quantity cm3/ : - **

100 s: (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1500

Aneroid pressure h: 900

Del.quantity : 239.0...242.0

1000 : (235.5...245.5)

Spread cm3 : 6.00

1000 : (10.00)

RATED SPEED

1st version

Control lever

position degrees: 96...104

Testing:

1st rack travel in: 11.50
Speed rpm : 1540...1550
2nd rack travel in: 4.00
Speed rpm : 1650...1680
3rd rack travel in: 4.00
Speed rpm : 1665...1695
4th rack travel in: 1750
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.4
Speed rpm : 350
Rack travel in mm : 6.80...7.00
Rack travel in mm : 2.00
Speed rpm : 525...585

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1500
Rack travel in m: 12.50...12.60
2nd speed rpm : 600
Rack travel in m: 12.50...12.70
3rd speed rpm : 400
Rack travel in m: 13.70...14.30

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 900
Rack travel mm : 12.50...12.60

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 11.50...11.60
2nd pressure hPa : 300
Rack travel in m: 11.90...12.00

FUEL DELIVERY CHARACTERISTICS

1st version

1000 s: 80.00)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 197.0...200.0
1000 s: (193.5...203.5)

BREAKAWAY

L14

1st version
1mm rack travel less than

full load rack tr: 11.50
Speed rpm : 1540...1550

HIGH IDLE

1st version

Speed rpm : 500
Rack travel in mm : <6.60
Del.quantity cm³/ : - **
1000 s: (-)

2nd version

Speed rpm : 500
Rack travel in mm : <7.1
Del.quantity cm³/ : <50.0
1000 s: (-)

3rd version

Speed rpm : 500
Rack travel in mm : 7.70...7.90
Del.quantity cm³/ : 80.0
1000 s: (-)

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.70...7.10
Del.quantity cm³/ : 20.0...26.0 *
1000 s: (-)

Remarks:

:

* applies to cylinders 2, 4 and 6
** applies for cylinders 1, 3 and 5

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : DAF 11,7 f1
 Edition : 16.02.90
 Replaces : 7.7.89
 Test oil : ISO-4113

Combination no. : 0 401 876 338

Injection pump
 Pump designation : PE6P120A320RS415-1
 EP type number : 0 411 826 123
 Governor
 Governor design. : RSV250...1100P5A508-9
 Governor no. : 0 421 833 321

Customer-spec. information
 Customer : DAF

Engine : KS 238

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 11.90...12.00

Del.quantity cm3/ : 18.8...19.0
 100 s: (18.5...19.3)

Spread cm3 : 0.5
 100 s: (0.9)

2nd speed rpm : 250.0
 Rack travel in mm : 6.6...6.8
 Del.quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)

Spread cm3 : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 650
 Aneroid pressure h: 700
 Del.quantity : 188.0...190.0
 1000 : (185.0...193.0)

Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version
 Control lever
 position degrees: 99...107

Testing:
 1st rack travel in: 10.00
 Speed rpm : 1130...1140
 2nd rack travel in: 4.00
 Speed rpm : 1185...1215

3rd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1400
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 70...78
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.0

Testing:

Speed rpm : 100
Speed rpm : 250
Rack travel in mm : 6.40...6.60
Rack travel in mm : 2.00
Speed rpm : 600...700

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1090
Rack travel in m: 11.00...11.20
2nd speed rpm : 650
Rack travel in m: 12.20...12.30
3rd speed rpm : 760
Rack travel in m: 11.60...11.80
4th speed rpm : 810
Rack travel in m: 11.20...11.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 600
Pressure hPa : 700
Rack travel mm : 11.90...12.00

Measurement

Speed 1/min : 600

1st pressure hPa : -
Rack travel in m: 9.70...9.90
2nd pressure hPa : 300
Rack travel in m: 11.30...11.40
3rd pressure hPa : 230
Rack travel in m: 10.40...10.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 1090
Del.quantity cm³/ : 180.0...184.0
1000 s: (177.0...187.0)
Aneroid pressure h: -
Speed rpm : 600

Del.quantity cm³/ : 131.0...133.0
1000 s: (128.0...136.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.00
Speed rpm : 1130...1140

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 305.0...345.0
1000 s: (301.0...349.0)
Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 250
Rack travel in mm : 6.40...6.60

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : ENA 10,1 g1
 Edition : 05.03.90
 Replaces : 1.12.89
 Test oil : ISO-4113

Combination no. : 0 401 876 339

Injection pump
 Pump designation : PE6P110A820LS513-1
 EP type number : 0 411 816 177
 Governor
 Governor design. : RSV250...1000POA532-1
 Governor no. : 0 421 833 331

Customer-spec. information
 Customer : ENASA

Engine : 95T1B0.MR4

1st version kW : 176.0
 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30
 : (3.15...3.35)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)
 Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 13.20...13.30

Del.quantity cm3/ : 18.8...19.0
 100 s: (18.5...19.3)

Spread cm3 : 0.4
 100 s: (0.7)

2nd speed rpm : 250.0
 Rack travel in mm : 6.5...6.7
 Del.quantity cm3/ : 1.8...2.2
 100 s: (1.5...2.4)

Spread cm3 : 0.4
 100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -3
 Speed rpm : 800
 Rack travel in mm : 0.30...0.70

Governor spring pre-tension
 Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 1000
 Del.quantity : 188.0...190.0
 1000 : (185.0...193.0)

Spread cm3 : 4.00
 1000 : (7.50)

RATED SPEED

1st version
 Control lever
 position degrees: 86...94

Testing:
 1st rack travel in: 12.20
 Speed rpm : 1040...1050
 2nd rack travel in: 4.00

Speed rpm : 1085...1115
3rd rack travel in: 4.00
Speed rpm : 1085...1115
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 63...71
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 250
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 330...390

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.20...13.30
2nd speed rpm : 450
Rack travel in m: 13.20...13.30
3rd speed rpm : 300
Rack travel in m: 14.40...15.00

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.90...6.10

Remarks:

:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 6,1 q 1
 Edition : 05.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 876 340
 Injection pump
 Pump designation : PE6P110A320RS499
 EP type number : 0 411 816 169
 Governor
 Governor design. : RSV325...1400POA374-
 9
 Governor no. : 0 421 833 335

Customer-spec. information
 Customer : PENTA

Engine : TAMD61

1st version kW : 221.0
 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness : 6.00X1.50X600
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.40...2.50
 : (2.35...2.55)

Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 11.10...11.20

Del.quantity cm3/ : 11.9...12.1

100 s: (11.6...12.4)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 325.0

Rack travel in mm : 4.1...4.3

Del.quantity cm3/ : 1.1...1.5

100 s: (0.9...1.7)

Spread cm3 : 0.3

100 s: (0.6)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Aneroid pressure h: 900

Del.quantity : 119.0...121.0

1000 : (116.0...124.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control Lever

position degrees: 120...128

Testing:

1st rack travel in: 10.10

Speed rpm : 1450...1460

2nd rack travel in: 4.00
Speed rpm : 1535...1565
4th rack travel in: 1630
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 83...91
Setting point w/out bumper spring
Speed rpm : 325
Rack travel in mm : 3.7
Speed rpm : 325
Rack travel in mm : 4.10...4.30
Rack travel in mm : 2.00
Speed rpm : 450...510

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 11.00...11.20

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.50...8.70
2nd pressure hPa : 690
Rack travel in m: 10.80...10.90
3rd pressure hPa : 400
Rack travel in m: 8.90...10.10

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 1400
Del.quantity cm3/ : 121.0...125.0
1000 s: (118.0...128.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 55.0...57.0
1000 s: (52.0...60.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.10
Speed rpm : 1450...1460

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...165.0
1000 s: (131.0...169.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.10...4.30
Del.quantity cm3/ : 11.0...15.0
1000 s: (9.0...17.0)
Spread cm3 : 3.00
1000 s: (6.00)

Remarks:

APPLICATION

Navy

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PEN 7,1 c 3
 Edition : 15.03.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 876 744
 Injection pump
 Pump designation : PE6P110A320RS3147
 EP type number : 0 411 816 743
 Governor
 Governor design. : RSV650...750P4A421-2
 Governor no. : 0 421 833 336

Customer-spec. information
 Customer : PENTA

Engine : TD71AG

1st version kW : 127.0
 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 0 681 343 009

Opening
 pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X600

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
 : (3.45...3.65)
 Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.70...10.80

Del.quantity cm3/ : 14.0...14.2

100 s: (13.7...14.5)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 650.0

Rack travel in mm : 4.1...4.3

Del.quantity cm3/ : 1.7...2.1

100 s: (1.4...2.3)

Spread cm3 : 0.6

100 s: (0.9)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 5.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 140.0...142.0

1000 : (137.0...145.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 93...101

Testing:

1st rack travel in: 9.70

Speed rpm : 742...747

2nd rack travel in: 4.00

Speed rpm : 771...784

4th rack travel in: 940
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 87...95
Setting point w/out bumper spring
Speed rpm : 650
Rack travel in mm : 4.2
Speed rpm : 650
Rack travel in mm : 4.10...4.30
Rack travel in mm : 2.00
Speed rpm : 635...695

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 155.0...175.0
1000 s: (151.0...179.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 650
Rack travel in mm : 4.10...4.30
Del.quantity cm³/ : 17.0...21.0
1000 s: (14.5...23.5)
Spread cm³ : 6.00
1000 s: (9.00)

Remarks:

:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 k 6
Edition : 15.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 876 759

Injection pump
Pump designation : PE6P110A320LS3814-11
EP type number : 0 411 816 756
Governor
Governor design. : RSV350...1050POA531-1
Governor no. : 0 421 833 271

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM421

1st version kW : 148.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-45-120-165-240-285

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 12.20...12.30

Del.quantity cm3/ : 13.0...13.2

100 s: (12.7...13.4)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 350.0

Rack travel in mm : 8.2...8.4

Del.quantity cm3/ : 1.3...1.9
100 s: (1.0...2.1)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 3.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del.quantity : 130.0...132.0

1000 : (127.5...134.5)

Spread cm3 : 4.00

1000 : (8.00)

RATED SPEED

1st version

Control lever

position degrees: 86...94

Testing:

1st rack travel in: 11.10
Speed rpm : 1065...1075
2nd rack travel in: 4.00
Speed rpm : 1130...1150
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 64...72
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 8.3
Speed rpm : 350
Rack travel in mm : 8.20...8.40

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm³/ : 112.0...116.0
1000 s: (109.0...119.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.10
Speed rpm : 1065...1075

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 130.0...150.0
1000 s: (126.0...154.0)

Remarks:

:

Observe VDT-I-420/120

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : VOL 12,2 c
Edition : 05.03.90
Replaces : 2.10.89
Test oil : ISO-4113

Combination no. : 0 401 876 769

Injection pump
Pump designation : PE6P120A320RS3206-2
EP type number : 0 411 826 784
Governor
Governor design. : RSV250..1300POA374-8
Governor no. : 0 421 833 320

Customer-spec. information
Customer : VOLVO-TRUCK

Engine : TAMD71A PD

1st version kw : 280.0
Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 10.10...10.20

Del.quantity cm3/ : 21.5...21.7

100 s: (21.2...22.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 5.1...5.3

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.5

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.40

Governor spring pre-tension

Click setting x : 6.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 215.5...217.5

1000 : (212.5...220.5)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 110...118

Testing:

1st rack travel in: 0.10
Speed rpm : 1335...1345
2nd rack travel in: 4.00
Speed rpm : 1415...1445
3rd rack travel in: 4.00
Speed rpm : 1425...1455
4th rack travel in: 1530
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 76...84
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 4.7
Speed rpm : 250
Rack travel in mm : 5.10...5.30
Rack travel in mm : 2.00
Speed rpm : 450...510

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 10.10...10.20

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 7.10...7.30
2nd pressure hPa : 360
Rack travel in m: 7.50...7.60
3rd pressure hPa : 780
Rack travel in m: 9.70...9.90

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -
Speed rpm : 700
Del.quantity cm³/ : 135.5...137.5
1000 s: (132.5...140.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.10
Speed rpm : 1335...1345

STARTING FUEL DELIVERY

Speed rpm : 100
Rack travel in mm : 7.10...7.30

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.10...5.30
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 5.00
1000 s: (7.00)

Remarks:

Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 12,0 a
Edition : 16.02.90
Replaces : 13.12.89
Test oil : ISO-4113

Combination no. : 0 401 876 770

Injection pump
Pump designation : PE6P110A320LS3852
EP type number : 0 411 816 768
Governor
Governor design. : RSV400...900P1A544
Governor no. : 0 421 833 326

Customer-spec. information
Customer : LIEBHERR

Engine : D 9306TB

1st version kW : 132.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
: (3.75...3.95)
Rack travel in mm : 9.00...12.00

Firing order : 1- 6- 3- 5- 2- 4

Phasing : 0-75-120-195-240-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 890

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 13.8...14.1

100 s: (13.5...14.3)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 1.3...1.8

100 s: (1.0...2.0)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 890

Del.quantity : 138.0...141.0

1000 : (135.5...143.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 88...96

Testing:

1st rack travel in: 10.70

Speed rpm : 930...940

2nd rack travel in: 4.00

Speed rpm : 945...975

3rd rack travel in: 4.00
Speed rpm : 950...980
4th rack travel in: 1120
Speed rpm : 0.30...1.40

Remarks:

LOW IDLE 1
Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL

Torque control curve - 1st version
1st speed rpm : 890
Rack travel in m: 11.70...11.80
2nd speed rpm : 500
Rack travel in m: 11.70...11.90
3rd speed rpm : 420
Rack travel in m: 12.90...13.50

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm³/ : 140.0...144.0
1000 s: (137.0...147.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 10.70
Speed rpm : 930...940

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00
Del.quantity cm³/ : 13.0...18.0
1000 s: (10.5...20.5)
Spread cm³ : 4.50
1000 s: (7.50)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 11,0 q14
 Edition : 04.05.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 401 876 773
 Injection pump
 Pump designation : PE6P120A320LS3815-13
 EP type number : 0 411 826 782
 Governor
 Governor design. : RSV750...1050POA820-10
 Governor no. : 0 421 833 339

Customer-spec. information
 Customer : MERCEDES-BENZ

Engine : OM441A

1st version kW : 191.0
 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
 quantity min. 1/h: 100...120

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70
 : (3.55...3.75)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 3- 5- 2- 4- 1

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 11.50...11.60

Del.quantity cm³/ : 18.5...18.7

100 s: (18.2...19.0)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 750.0
 Rack travel in mm : 3.2...3.6
 Del.quantity cm³/ : 2.4...3.2
 100 s: (2.1...3.5)

Spread cm³ : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1030

Del.quantity : 185.0...187.0

1000 : (182.0...190.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 87...95

Testing:

1st rack travel in: 10.50
Speed rpm : 1060...1070
2nd rack travel in: 4.00
Speed rpm : 1090...1108
4th rack travel in: 1250
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 73...81
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 3.4

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 750
Rack travel in mm : 3.20...3.60
Rack travel in mm : 2.00
Speed rpm : 755...815

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 900
Del.quantity cm3/ : 188.0...192.0
1000 s: (185.0...195.0)
Spread cm3 : 8.00
1000 s: (12.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50
Speed rpm : 1060...0

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

Remarks:

:

APPLICATION

Combine-harvester

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 t 1
Edition : 06.04.90
Replaces : 15.8.89
Test oil : ISO-4113

Combination no. : 0 401 878 706

Injection pump
Pump designation : PE8P110A320LS3813-10
EP type number : 0 411 818 712
Governor
Governor design. : RSV350...750POA824-2
Governor no. : 0 421 833 228

Customer-spec. information
Customer : DAIMLER-BENZ

Engine : OM422

1st version kW : 173.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness : 6.00X1.50X600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
4- 1

Phasing : 0-45-90-135-180-225-
270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.10...13.20

Del.quantity cm³/ : 14.2...14.4

100 s: (13.9...14.6)

Spread cm³ : 0.4

100 s: (0.8)

2nd speed rpm : 350.0
Rack travel in mm : 7.2...7.5
Del.quantity cm³/ : 1.4...1.8
100 s: (1.1...2.0)
Spread cm³ : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.40

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del.quantity : 142.0...144.0
1000 : (139.5...146.5)
Spread cm³ : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 26...34

Testing:

1st rack travel in: 12.10
Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 780...793
4th rack travel in: 1200
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 12...20
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 7.3

Testing:

Speed rpm : 100
Minimum rack trave: 13.00
Speed rpm : 350
Rack travel in mm : 7.20...7.50

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 10.70
Speed rpm : 1175...1185

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

Observe VDT-I-420/120

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,6 p 3
Edition : 02.02.90
Replaces : 16.5.88
Test oil : ISO-4113

Combination no. : 0 401 878 707

Injection pump
Pump designation : PE8P120A32OLS3816-10
EP type number : 0 411 828 715
Governor
Governor design. : RSV350..750POA824-3
Governor no. : 0 421 833 229

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM422A

1st version kW : 227.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
 270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.10...12.20

Del.quantity cm³/ : 18.4...18.6
100 s: (18.1...18.9)

Spread cm³ : 0.5
100 s: (0.9)

2nd speed rpm : 350.0
Rack travel in mm : 5.3...5.6
Del.quantity cm³/ : 1.6...2.2
100 s: (1.3...2.5)
Spread cm³ : 0.8
100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del.quantity : 184.0...186.0
1000 : (181.0...189.0)
Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 26...30

Testing:

1st rack travel in: 8.30
Speed rpm : 1210...1220
2nd rack travel in: 4.00
Speed rpm : 1235...1250
4th rack travel in: 1.40
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 12...20
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.4

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 5.30...5.60

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1180
Rack travel in m: 9.30...9.40
2nd speed rpm : 975
Rack travel in m: 10.10...10.20
3rd speed rpm : 1075
Rack travel in m: 9.60...9.80

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.30
Speed rpm : 1210...1220

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 170.0...190.0
1000 s: (166.0...194.0)

Remarks:

Observe VDT-I-420/120

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : LIE 16,0 a
Edition : 16.02.90
Replaces : 13.12.89
Test oil : ISO-4113

Combination no. : 0 401 878 714

Injection pump
Pump designation : PE8P110A520/4LS3853
EP type number : 0 411 818 720
Governor
Governor design. : RSV400...900P1A544
Governor no. : 0 421 833 326

Customer-spec. information
Customer : LIEBHERR

Engine : D 9308 T

1st version kW : 260.0
Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness : 6.00X1.50X600
x Length mm

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 3.80...3.90
: (3.75...3.95)
Rack travel in mm : 9.00...12 00

Firing order : 1- 8- 7- 2- 6- 3-
5- 4

Phasing : 0-45-90-135-180-225-
270-315

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 890

Rack travel in mm : 13.80...13.90

Del.quantity cm3/ : 17.5...17.8

100 s: (17.2...18.0)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 400.0

Rack travel in mm : 5.8...6.0

Del.quantity cm3/ : 1.3...1.8

100 s: (1.0...2.0)

Spread cm3 : 0.4

100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 890

Del.quantity : 175.0...178.0

1000 : (172.5...180.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 87...95

Testing:

1st rack travel in: 12.80

Speed rpm : 930...940

2nd rack travel in: 4.00

Speed rpm : 945...975
3rd rack travel in: 4.00
Speed rpm : 950...980
4th rack travel in: 1120
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 64...72
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.4

Testing:
Speed rpm : 100
Speed rpm : 400
Rack travel in mm : 5.80...6.00
Rack travel in mm : 2.00
Speed rpm : 450...510

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 890
Rack travel in m: 13.80...13.90
2nd speed rpm : 500
Rack travel in m: 13.80...14.00
3rd speed rpm : 420
Rack travel in m: 15.00...15.60

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 500
Del.quantity cm3/ : 176.0...184.0
1000 s: (173.0...187.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.80
Speed rpm : 930...940

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (146.0...174.0)

LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.80...6.00

Del.quantity cm3/ : 13.0...18.0
1000 s: (10.5...20.5)
Spread cm3 : 4.50
1000 s: (7.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 14,7 s
Edition : 02.05.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 878 715

Injection pump
Pump designation : PE8P110A320LS3842-2
EP type number : 0 411 818 722
Governor
Governor design. : RSV650...1200POA820-7

Governer no. : 0 421 833 341

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM442

1st version kW : 213.0
Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 100...120

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
 : (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 8- 7- 2- 6- 3- 5-
 4- 1

Phasing : 0-45-90-135-180-225-
Phasing : 270-315
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 8

BASIC SETTING

1st speed rpm : 1030
Rack travel in mm : 12.90...13.00
Del.quantity cm3/ : 13.7...13.9
100 s: (13.4...14.1)
Spread cm3 : 0.4
100 s: (0.8)

2nd speed rpm : 350.0
Rack travel in mm : 5.5...6.0
Del.quantity cm3/ : 1.6...2.2
100 s: (1.3...2.4)
Spread cm3 : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1030
Del.quantity : 137.0...139.0
1000 : (134.5...141.5)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 86...94

Testing:
1st rack travel in: 12.30
Speed rpm : 1090...1100

2nd rack travel in: 4.00
Speed rpm : 1150...1180
4th rack travel in: 1400
Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever
position degrees: 68...72
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.7

Testing:

Speed rpm : 100
Minimum rack travel: 19.50
Speed rpm : 350
Rack travel in mm : 5.50...6.00
Rack travel in mm : 2.00
Speed rpm : 350...370

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 128.0...132.0
1000 s: (125.0...135.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.30
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 18,3 j 1
Edition : 16.02.90
Replaces : 12.9.86
Test oil : ISO-4113

Combination no. : 0 401 879 702

Injection pump
Pump designation : PE10P120A320LS3831
EP type number : 0 411 829 705
Governor
Governor design. : RSV350...750POA824-9
Governor no. : 0 421 833 235

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM 423 LA

1st version kW : 309.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7
- 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
216-261-288-333
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 11.70...11.80

Del.quantity cm³/ : 19.0...19.2

100 s: (18.7...19.5)

Spread cm³ : 0.5

100 s: (0.8)

2nd speed rpm : 350.0
Rack travel in mm : 4.8...5.0
Del.quantity cm³/ : 1.6...2.2
100 s: (1.3...2.5)
Spread cm³ : 0.8
100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 700
Del.quantity : 190.0...192.0
1000 : (187.0...195.0)
Spread cm³ : 5.00
1000 : (8.00)

RATED SPEED

1st version

Control lever
position degrees: 24...32

Testing:

1st rack travel in: 10.70
Speed rpm : 750...755
2nd rack travel in: 4.00
Speed rpm : 775...788
4th rack travel in: 900
Speed rpm : 0.30...1.70

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 4.9
Speed rpm : 350
Rack travel in mm : 4.80...5.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.40
Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 170.0...190.0
1000 s: (166.0...194.0)

Remarks:

:
Observe VDT-I-420/120

APPLICATION

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 18,3 a
Edition : 06.04.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 879 707

Injection pump
Pump designation : PE10P110A320LS3856
EP type number : 0 411 819 711
Governor
Governor design. : RSV675...1050POA823-
8

Governer no. : 0 421 833 338

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM 443

1st version kW : 242.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY
Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7
- 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
Phasing : 216-261-288-333
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1030
Rack travel in mm : 12.20...12.30
Del.quantity cm3/ : 12.3...12.5
100 s: (12.0...12.7)
Spread cm3 : 0.4
100 s: (0.8)

2nd speed rpm : 675.0
Rack travel in mm : 5.4...5.7
Del.quantity cm3/ : 1.2...2.0
100 s: (0.9...2.2)
Spread cm3 : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

Governor spring pre-tension
Click setting x : 7.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1030
Del.quantity : 123.0...125.0
1000 : (120.5...127.5)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 80...88

Testing:

1st rack travel in: 11.20
Speed rpm : 1165...1175
2nd rack travel in: 4.00
Speed rpm : 1210...1225
4th rack travel in: 1200
Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever
position degrees: 66...74
Setting point w/out bumper spring
Speed rpm : 675
Rack travel in mm : 5.5

Testing:

Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 675
Rack travel in mm : 5.40...5.70
Rack travel in mm : 2.00

SET IDLE AUXILIARY SPRING

Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm3/ : 109.0...113.0
1000 s: (106.0...116.0)
Spread cm3 : 6.00
1000 s: (9.)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.20
Speed rpm : 1165...1175

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB 18,3 q 1
Edition : 05.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 401 879 707

Injection pump
Pump designation : PE10P110A320LS3856
EP type number : 0 411 819 711
Governor
Governor design. : RSV750...1050P0A825-
8

Governer no. : 0 421 833 338

Customer-spec. information
Customer : MERCEDES-BENZ

Engine : OM 423

1st version kW : 242.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Overflow
quantity min. 1/h: 130...150

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10
: (3.95...4.15)
Rack travel in mm : 9.00...12.00
Firing order : 10- 9- 4- 1- 8- 7
: - 6- 3- 5- 2

Phasing : 0-45-72-117-144-189-
Phasing : 216-261-288-333
Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 10

BASIC SETTING

1st speed rpm : 1030

Rack travel in mm : 11.70...11.80

Del.quantity cm3/ : 12.5...12.7

100 s: (12.2...12.9)

Spread cm3 : 0.4

100 s: (0.8)

2nd speed rpm : 750.0
Rack travel in mm : 5.5...5.8
Del.quantity cm3/ : 1.2...2.0
100 s: (0.9...2.2)
Spread cm3 : 0.4
100 s: (0.7)

GUIDE SLEEVE POSITION

Control-lever position
Degree: -3
Speed rpm : 800
Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1030
Del.quantity : 125.0...127.0
1000 : (122.5...129.5)
Spread cm3 : 4.00
1000 : (8.00)

RATED SPEED

1st version
Control lever
position degrees: 36...44

Testing:
1st rack travel in: 12.20
Speed rpm : 1165...1175

2nd rack travel in: 4.00
Speed rpm : 1210...1225
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1
Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rpm : 750
Rack travel in mm : 5.6

Testing:
Speed rpm : 100
Minimum rack trave: 19.50
Speed rpm : 750
Rack travel in mm : 5.50...5.80
Rack travel in mm : 2.00

SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 600
Del.quantity cm3/ : 112.0...116.0
1000 s: (109.0...119.0)
Spread cm3 : 6.00
1000 s: (9.00)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.20
Speed rpm : 1165...1175

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a15
 Edition : 31.07.87
 Replaces : 12.9.86
 Test oil : ISO-4113
 Combination no. : 0 402 036 043
 Injection pump
 Pump designation : PES6P120A720/3LS470-
 2
 EP type number : 0 412 026 050
 Governor
 Governor design. : RQ300/1100PA658-18
 Governor no. : 0 421 801 322

Customer-spec. information
 Customer : MAN

Engine : D2866LFZ/290

1st version kW : 213.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00x1.50x1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 10.30...10.40

Del.quantity cm3/ : 18.3...18.5

100 s: (18.0...18.8)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.8...5.0
 Del.quantity cm3/ : 1.2...1.8
 100 s: (0.9...2.1)
 Spread cm3 : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 750
 Aneroid pressure h: 1000
 Del.quantity : 183.0...185.0
 1000 : (180.0...188.0)
 Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Setting point:
 Speed rpm : 600
 Rack travel in mm : 20.0

Testing:

1st rack travel in: 8.70
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1180...1210
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.9

Testing:

Speed rpm : 100
Minimum rack travel: 6.40
Speed rpm : 300
Rack travel in mm : 4.80...5.00
Rack travel in mm : 2.00
Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : 0.40
Torque control curve - 1st version
1st speed rpm : 750
Rack travel in m: 10.60...10.70
2nd speed rpm : 1100
Rack travel in m: 9.70...9.80
3rd speed rpm : 875
Rack travel in m: 10.40...10.60
4th speed rpm : 950
Rack travel in m: 9.90...10.20

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 10.30...10.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 85
Rack travel in m: 9.30...9.40
3rd pressure hPa : 160
Rack travel in m: 9.80...10.20

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

M18

Aneroid pressure h: 1000
Speed rpm : 1100
Del.quantity cm³/ : 178.0...182.0
1000 s: (175.0...185.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm³/ : 174.0...180.0
1000 s: (171.0...183.0)
Aneroid pressure h: 160
Speed rpm : 500
Del.quantity cm³/ : 157.0...169.0
1000 s: (154.0...172.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.70
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.80...5.00
Del.quantity cm³/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7713

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9a41
Edition : 15.12.89
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 036 044

Injection pump
Pump designation : PES6P120A720/3LS470-
2
EP type number : 0 412 026 050
Governor
Governor design. : RQ300/1100PA658-19
Governor no. : 0 421 801 323

Customer-spec. information
Customer : MAN

Engine : D2866LFZ

1st version kW : 243.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 2.80...2.90
: (2.75...2.95)

Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 750

Rack travel in mm : 11.30...11.40

Del.quantity cm³/ : 20.7...20.9

100 s: (20.4...21.2)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.6...4.8

Del.quantity cm³/ : 1.2...1.8

100 s: (0.9...2.1)

Spread cm³ : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 750

Aneroid pressure h: 1000

Del.quantity : 207.0...209.0

1000 : (204.0...212.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600

Rack travel in mm : 20.0

Testing:

1st rack travel in: 9.50

Speed rpm : 1145...1160

2nd rack travel in: 4.00

Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.7

Testing:

Speed rpm : 100
Minimum rack travel: 6.20
Speed rpm : 300
Rack travel in mm : 4.60...4.80
Rack travel in mm : 2.00
Speed rpm : 340...380

TORQUE CONTROL

Dimension a mm : 0.50
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.70...11.80
2nd speed rpm : 750
Rack travel in m: 11.90...12.20
3rd speed rpm : 875
Rack travel in m: 11.80...12.00
4th speed rpm : 950
Rack travel in m: 11.20...11.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1000
Rack travel mm : 11.30...11.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.90...9.10
2nd pressure hPa : 85
Rack travel in m: 9.30...9.40
3rd pressure hPa : 280
Rack travel in m: 10.50...10.90

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000
Speed rpm : 1100

Del.quantity cm3/ : 203.0...207.0
1000 s: (200.0...210.0)
Aneroid pressure h: 1000
Speed rpm : 650
Del.quantity cm3/ : 208.0...214.0
1000 s: (205.0...217.0)
Aneroid pressure h: 280
Speed rpm : 500
Del.quantity cm3/ : 184.0...196.0
1000 s: (181.0...199.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 132.0...134.0
1000 s: (129.0...137.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.50
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 225.0...245.0
1000 s: (221.0...249.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.60...4.80
Del.quantity cm3/ : 12.0...18.0
1000 s: (9.0...21.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7756

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 j
Edition : 23.03.90
Replaces : 11.5.89
Test oil : ISO-4113

Combination no. : 0 402 036 726

Injection pump
Pump designation : PES6P120A720/3LS3205
EP type number : 0 412 026 729
Governor
Governor design. : RQ300/1100PA813-2
Governor no. : 0 421 801 416

Customer-spec. information
Customer : MAN

Engine : D2866LX

1st version kW : 265.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.30...13.40

Del.quantity cm3/ : 24.2...24.4

100 s: (23.9...24.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.1...4.3

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 650

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 242.0...244.0

1000 : (239.0...247.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.00

Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.2

Testing:

Speed rpm : 100
Minimum rack travel: 5.70
Speed rpm : 300
Rack travel in mm : 4.10...4.30
Rack travel in mm : 2.00
Speed rpm : 330...370

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 13.00...13.10
2nd speed rpm : 700
Rack travel in m: 13.50...13.70

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.30...13.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 110
Rack travel in m: 10.20...10.30
3rd pressure hPa : 470
Rack travel in m: 11.90...12.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1100
Del.quantity cm³/ : 230.0...236.0
1000 s: (227.0...239.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1145...1160

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 210.0...230.0
1000 s: (206.0...234.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.10...4.30
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7889

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 k3
 Edition : 23.03.90
 Replaces : 15.8.89
 Test oil : ISO-4113
 Combination no. : 0 402 036 727
 Injection pump
 Pump designation : PES6P120A720/3LS3205
 EP type number : 0 412 026 729
 Governor
 Governor design. : RQV300...1100PA876-1
 Governor no. : 0 421 813 670

Customer-spec. information
 Customer : MAN

Engine : D2866LX

1st version kw : 265.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness : 6.00X1.50X1000
 x Length mm

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.30...13.40

Del.quantity cm3/ : 24.2...24.4

100 s: (23.9...24.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.1...4.3

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.10...1.30

2nd speed rpm : 450

travel mm : 3.10...3.50

3rd speed rpm : 900

travel mm : 6.00...6.40

4th speed rpm : 1100

travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1175

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 242.0...244.0

1000 : (239.0...247.0)

Spread cm³ : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 116...124

Testing:
1st rack travel in: 12.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1250...1280
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 79...87

Testing:
Speed rpm : 100
Minimum rack travel: 5.70
Speed rpm : 300
Rack travel in mm : 4.10...4.30

CONSTANT REGULATION
Speed rpm : 300...400

TORQUE CONTROL
Dimension a mm : 0.30
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 13.00...13.10
2nd speed rpm : 700
Rack travel in m: 13.30...13.40
3rd speed rpm : 1000
Rack travel in m: 13.10...13.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.30...13.40

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 110
Rack travel in m: 10.20...10.30
3rd pressure hPa : 470
Rack travel in m: 11.90...12.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 1100
Del.quantity cm³/ : 231.0...235.0
1000 s: (228.0...238.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 12.00
Speed rpm : 1140...1150

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.10...4.30
Del.quantity cm³/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks: : MAN-NR. 2-7890

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 j2
Edition : 30.03.90
Replaces : 14.7.89
Test oil : ISO-4113

Combination no. : 0 402 036 729

Injection pump
Pump designation : PES6P120A720/3LS3205
EP type number : 0 412 026 729
Governor
Governor design. : RQ300/1100PA813-7
Governor no. : 0 421 801 474

Customer-spec. information
Customer : MAN

Engine : D2866LXUH

1st version kW : 273.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.50...13.60

Del.quantity cm3/ : 24.2...24.4

100 s: (23.9...24.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.3...4.5

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 650

Rack travel in mm : 14.70...16.30

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 242.0...244.0

1000 : (239.0...247.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 15.5

Testing:

1st rack travel in: 12.00

Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.4

Testing:

Speed rpm : 100
Minimum rack travel: 5.90
Speed rpm : 300
Rack travel in mm : 4.30...4.50
Rack travel in mm : 2.00
Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 13.00...13.10
2nd speed rpm : 700
Rack travel in m: 14.30...14.40
3rd speed rpm : 885
Rack travel in m: 13.60...13.90
4th speed rpm : 935
Rack travel in m: 13.30...13.60

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.50...13.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.30...9.50
2nd pressure hPa : 190
Rack travel in m: 9.70...9.80
3rd pressure hPa : 520
Rack travel in m: 11.80...12.10

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

Speed rpm : 1100
Del.quantity cm3/ : 230.0...236.0
1000 s: (227.0...239.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 120.0...122.0
1000 s: (117.0...125.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1145...1160

INTERMEDIATE RATED SPEED

Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 230.0...250.0
1000 s: (226.0...254.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.30...4.50
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7946

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 k2
 Edition : 16.02.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 036 731
 Injection pump
 Pump designation : PES6P120A720/3LS3205
 EP type number : 0 412 026 729
 Governor
 Governor design. : RQV300...950PA876-3
 Governor no. : 0 421 313 807

Customer-spec. information
 Customer : MAN

Engine : D2866LXF/339

1st version kW : 250.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.90...13.00

Del. quantity cm³/ : 23.0... 23.2

100 s : (22.7...23.5)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.1...4.3

Del. quantity cm³/ : 1.7...2.3

100 s : (1.4...2.6)

Spread cm³ : 0.8

100 s : (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300
 travel mm : 1.00...1.40

2nd speed rpm : 800
 travel mm : 5.00...5.40

3rd speed rpm : 1000
 travel mm : 7.80...8.20

4th speed rpm : 1100
 travel mm : 9.10...9.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1050

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del. quantity : 230.0...232.0

1000 : (227.0...235.0)

Spread cm³ : 5.00
 1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 295...301

Testing:
1st rack travel in: 11.70
Speed rpm : 990...1000
2nd rack travel in: 4.00
Speed rpm : 1070...1100
4th rack travel in: 1150
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 258...266

Testing:
Speed rpm : 200
Minimum rack travel: 6.00
Speed rpm : 300
Rack travel in mm : 4.10...4.30

CONSTANT REGULATION
Speed rpm : 300...400

TORQUE CONTROL
Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 950
Rack travel in m: 12.70...12.80
2nd speed rpm : 700
Rack travel in m: 12.90...13.20

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 12.90...13.00

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 110
Rack travel in m: 10.20...10.30
3rd pressure hPa : 470
Rack travel in m: 11.90...12.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 950
Del.quantity cm³/ : 228.0...232.0
 1000 s: (225.0...235.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 134.0...136.0
 1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 990...1000

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 210.0...230.0
 1000 s: (206.0...234.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.10...4.30
Del.quantity cm³/ : 17.0...23.0
 1000 s: (14.0...26.0)
Spread cm³ : 8.00
 1000 s: (12.00)

Remarks: : MAN-NR. 2-7942

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 j3
 Edition : 16.02.90
 Replaces : 9.11.89
 Test oil : ISO-4113
 Combination no. : 0 402 036 732
 Injection pump
 Pump designation : PES6P120A720/3LS3205
 EP type number : 0 412 026 729
 Governor
 Governor design. : RQ300/950PA813-10
 Governor no. : 0 421 801 493

Customer-spec. information
 Customer : MAN

Engine : D2866LXF/339

1st version kW : 250.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test Lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
 Rack travel in mm : 9.00...12.00
 Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 12.90...13.00

Del.quantity cm3/ : 23.0...23.2

100 s: (22.7...23.5)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
 Rack travel in mm : 4.1...4.3
 Del.quantity cm3/ : 1.7...2.3
 100 s: (1.4...2.6)
 Spread cm3 : 0.8
 100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 650

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
 Speed rpm : 700
 Aneroid pressure h: 1200
 Del.quantity : 230.0...232.0
 1000 : (227.0...235.0)
 Spread cm3 : 5.00
 1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 20.0

Testing:

1st rack travel in: 11.70

Speed rpm : 995...1010
2nd rack travel in: 4.00
Speed rpm : 1045...1075
4th rack travel in: 1150
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.2

Testing:

Speed rpm : 100
Minimum rack travel: 5.70
Speed rpm : 300
Rack travel in mm : 4.10...4.30
Rack travel in mm : 2.00
Speed rpm : 350...390

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 950
Rack travel in m: 12.70...12.80
2nd speed rpm : 700
Rack travel in m: 13.20...13.40

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 12.90...13.00

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 110
Rack travel in m: 10.20...10.30
3rd pressure hPa : 470
Rack travel in m: 11.90...12.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 950
Del.quantity cm3/ : 228.0...232.0
1000 s: (225.0...235.0)
Aneroid pressure h: -

N02

Speed rpm : 500
Del.quantity cm3/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 11.70
Speed rpm : 995...1010

INTERMEDIATE RATED SPEED
Rack travel in mm : 4.00

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 210.0...230.0
1000 s: (206.0...234.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.10...4.30
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7962

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 p
Edition : 30.03.90
Replaces : -
Test oil : ISO-4113
Combination no. : 0 402 036 733
Injection pump
Pump designation : PES6P120A720/3LS3247
EP type number : 0 412 026 735
Governor
Governor design. : RQV300...1100PA876-4
Governor no. : 0 421 813 851

Customer-spec. information
Customer : MAN

Engine : D2866LXF/A00

1st version kW : 273.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 14.50...15.50
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.50...13.60

Del.quantity cm3/ : 24.2...24.4

100 s: (23.9...24.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.2...4.6

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.00...1.40

2nd speed rpm : 500

travel mm : 2.90...3.50

3rd speed rpm : 800

travel mm : 5.10...5.50

4th speed rpm : 1100

travel mm : 7.70...7.90

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1135

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 242.0...244.0

1000 : (239.0...247.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 296...304

Testing:

1st rack travel in: 12.00
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1235...1265
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 258...266

Testing:

Speed rpm : 200
Minimum rack travel: 5.90
Speed rpm : 300
Rack travel in mm : 4.30...4.50

CONSTANT REGULATION

Speed rpm : 320...430

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.50...13.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.50...9.70
2nd pressure hPa : 110
Rack travel in m: 9.80...10.00
3rd pressure hPa : 470
Rack travel in m: 11.60...12.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1100

Del.quantity cm3/ : 230.0...236.0
1000 s: (227.0...239.0)
Speed rpm : 700
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.20...4.60
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7890

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 q
Edition : 30.03.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 036 734

Injection pump
Pump designation : PES6P120A720/3LS3247
EP type number : 0 412 026 735
Governor
Governor design. : RQ300/1100PA813-12
Governor no. : 0 421 801 518

Customer-spec. information
Customer : MAN

Engine : D2866LXF/A00

1st version kW : 273.0

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80
: (3.65...3.85)
Rack travel in mm : 14.50...15.50
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.50...13.60

Del.quantity cm3/ : 24.2...24.4

100 s: (23.9...24.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.2...4.6

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 242.0...244.0

1000 : (239.0...247.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 600
Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.00
Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1150
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.4

Testing:

Speed rpm : 200
Minimum rack travel: 5.90
Speed rpm : 300
Rack travel in mm : 4.30...4.50

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 13.00...13.10
2nd speed rpm : 700
Rack travel in m: 13.70...13.90

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.50...13.60

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.50...9.70
2nd pressure hPa : 110
Rack travel in m: 9.80...10.00
3rd pressure hPa : 470
Rack travel in m: 11.60...12.00

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

N06

Speed rpm : 1100
Del.quantity cm3/ : 230.0...236.0
1000 s: (227.0...239.0)

Speed rpm : 700
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm3/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000 s: (186.0...214.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.20...4.60
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7889

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 r
Edition : 12.04.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 036 735

Injection pump
Pump designation : PES6P120A720/3LS3250
EP type number : 0 412 026 736
Governor
Governor design. : RQ300/1100PA813-2
Governor no. : 0 421 801 416

Customer-spec. information
Customer : MAN

Engine : D2866LX

1st version kW : 265.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80
 : (3.65...3.85)
Rack travel in mm : 9.00...12.00
Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.30...13.40

Del.quantity cm3/ : 24.2...24.4

100 s: (23.9...24.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0

Rack travel in mm : 4.1...4.3

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 650

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Aneroid pressure h: 1200

Del.quantity : 242.0...244.0

1000 : (239.0...247.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 650

Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.00

Speed rpm : 1145...1160
2nd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring
Speed rpm : 300
Rack travel in mm : 4.2

Testing:

Speed rpm : 100
Minimum rack trave: 5.70
Speed rpm : 300
Rack travel in mm : 4.10...4.30
Rack travel in mm : 2.00
Speed rpm : 330...370

TORQUE CONTROL

Dimension a mm : 0.20
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 13.00...13.10
2nd speed rpm : 700
Rack travel in m: 13.50...13.70

Aneroid/Altitude
Compensator Test

1st version

Setting

Speed rpm : 500
Pressure hPa : 1200
Rack travel mm : 13.30...13.40

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 9.80...10.00
2nd pressure hPa : 110
Rack travel in m: 10.20...10.30
3rd pressure hPa : 470
Rack travel in m: 11.90...12.30

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200
Speed rpm : 1100
Del.quantity cm3/ : 230.0...236.0
1000 s: (227.0...239.0)
Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm3/ : 134.0...136.0
1000 s: (131.0...139.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.00
Speed rpm : 1145...1160

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 210.0...230.0
1000 s: (206.0...234.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.10...4.30
Del.quantity cm3/ : 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: MAN-NR. 2-7889

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAC 11,1 g
Edition : 20.3.90
Replaces : -
Test oil : ISO-4113
Combination no. : 0 402 046 097
Injection pump
Pump designation : PES6P110A720RS3009
Governor
Governor design. : RQV275...1050PA262KR

Cust. part no. : *

Customer-spec. information
Customer : MACK

Engine : ENDT 676

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 40

Inlet press., bar : 0.2

Opening
pressure, bar : 280...283

Test lines : 9 681 230 710

Outside diameter
x Wall thickness
x Length mm : 6.35X1.70X914.40

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

N09

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 13.2...13.8

100 s : (-)

Spread cm3 : 0.3

100 s : (-)

2nd speed rpm : 275
Del.quantity cm3/ : 1.4...2.4
100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1050

Rack travel in mm : 15.00...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000
Del.quantity : 168.0...170.0
1000 : (166.0...172.0)

RATED SPEED

1st version

Control lever
position degrees: 62...70

Testing:

1st rack travel in: 16.40
Speed rpm : 1040...1060
2nd rack travel in: 11.90
Speed rpm : 1085...1115
3rd rack travel in: 4.00...9.60
Speed rpm : 1150
4th rack travel in: 1180
Speed rpm : 0.00...7.00
5th rack travel in: 1260
Speed rpm : -

LOW IDLE 1

Control lever
position degrees: 6...14

Testing:

Speed rpm : 200
Minimum rack trave: 6.00
Speed rpm : 300
Rack travel in mm : 3.20...4.40
Rack travel in mm : 3.00
Speed rpm : 385...415
Speed rpm : 500
Maximum rack trave: 2.70
Speed rpm : 680

Rack travel in mm : -

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 13.70...13.80

2nd speed rpm : 800

Rack travel in m: 13.90...14.00

3rd speed rpm : 600

Rack travel in m: 14.60...14.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del.quantity cm3/ : 182.0...189.0

1000 s: (180.0...191.0)

Speed rpm : 600

Del.quantity cm3/ : 214.0...219.0

1000 s: (212.0...221.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: ?

Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...175.0

1000 s: (-)

LOW IDLE

Speed rpm : 275

Del.quantity cm3/ : 14.0...24.0

1000 s: (-)

Remarks:

: MACK # 313 CC 597 P7

See VDT-I-MAC 002

PLE dimension = 0.670" - 0.744"

The test specifications apply to testing of the injection-pump assembly with the genuine engine/nozzle-and-holder assembly

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAC 11,1 g1
 Edition : 20.3.90
 Replaces : -
 Test oil : ISO-4113
 Combination no. : 0 402 046 105
 Injection pump
 Pump designation : PES6P110A720RS3009
 Governor
 Governor design. : RQV275...1050PA262KR
 Cust. part no. : *
 Customer-spec. information
 Customer : MACK
 Engine : ENDT 676

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 40
 Inlet press., bar : 0.2
 Opening
 pressure, bar : 300...303
 Test lines : 9 681 230 710
 Outside diameter
 x Wall thickness
 x Length mm : 6.35x1.70x914.40
 (A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1-5-3-6-2-4
 Phasing : 0-60-120-180-240-300
 Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 13.2...13.8

100 s : -

Spread cm3 : 0.3

100 s : (-)

2nd speed rpm : 275
 Del.quantity cm3/ : 1.4...2.4
 100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1050

Rack travel in mm : 15.00...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000
 Del.quantity : 168.0...170.0
 1000 : (166.0...172.0)

RATED SPEED

1st version

Control lever
 position degrees: 62...70

Testing:

1st rack travel in: 16.40
 Speed rpm : 1040...1060
 2nd rack travel in: 11.90
 Speed rpm : 1085...1115
 3rd rack travel in: 4.00...9.60
 Speed rpm : 1150
 4th rack travel in: 1180
 Speed rpm : 0.00...7.00
 5th rack travel in: 1260
 Speed rpm : -

LOW IDLE 1

Control lever
 position degrees: 6...14

Testing:

Speed rpm : 200
 Minimum rack trave: 6.00
 Speed rpm : 300
 Rack travel in mm : 3.20...4.40
 Rack travel in mm : 3.00
 Speed rpm : 385...415
 Speed rpm : 500
 Maximum rack trave: 2.70
 Speed rpm : 680

Rack travel in mm : -

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000

Rack travel in m: 13.70...13.80

2nd speed rpm : 800

Rack travel in m: 13.90...14.00

3rd speed rpm : 600

Rack travel in m: 14.60...14.70

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 800

Del.quantity cm3/ : 182.0...189.0
1000 s: (180.0...191.0)

Speed rpm : 600

Del.quantity cm3/ : 214.0...219.0
1000 s: (212.0...221.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: ?

Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 140.0...175.0
1000 s: (-)

LOW IDLE

Speed rpm : 275

Del.quantity cm3/ : 14.0...24.0
1000 s: (-)

Remarks:

: MACK # 313 CC 597 P7

See VDT-I-MAC 002

PLE dimension = 0.670" - 0.744"

The test specifications apply to testing of the injection-pump assembly with the genuine engine/nozzle-and-holder assembly

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAC 11,1 g2
Edition : 22.3.90
Replaces : -
Test oil : ISO-4113
Combination no. : 0 402 046 127
Injection pump
Pump designation : PES6P110A72ORS3009
Governor
Governor design. : RQV300/600...1050PA
300KR

Cust. part no. : *

Customer-spec. information
Customer : MACK

Engine : ENDT (B) 676

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 40

Inlet press., bar : 1.5

Opening
pressure, bar : 300...303

Test lines : 9 681 230 710

Outside diameter
x Wall thickness
x Length mm : 6.35X1.70X914.40

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90
(2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300
Phasing : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.00...12.10

Del.quantity cm3/ : 13.5...14.1

100 s : (-)

Spread cm3 : 0.4

100 s : (-)

2nd speed rpm : 275
Del.quantity cm3/ : 1.2...2.2
100 s : (-)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1070

Rack travel in mm : 15.00...17.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

Del.quantity : 162.5...165.5

1000 : (160.5...167.5)

RATED SPEED

1st version

Control lever

position degrees: 62...70

Testing:

1st rack travel in: 16.40

Speed rpm : 1060...1080

2nd rack travel in: 9.30

Speed rpm : 1135...1165

3rd rack travel in: 0.00...7.80

Speed rpm : 1200

4th rack travel in: 1280

Speed rpm : -

LOW IDLE 1

Control lever

position degrees: 8...16

Testing:

Speed rpm : 250

Minimum rack trave: 6.30

Speed rpm : 300

Rack travel in mm : 4.00...6.50

Rack travel in mm : 2.10

Speed rpm : 345...375

Speed rpm : 560

Maximum rack trave: 1.20

Speed rpm : 740

Rack travel in mm : -

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1000
Rack travel in m: 13.70...13.80
2nd speed rpm : 900
Rack travel in m: 13.80...13.90
3rd speed rpm : 800
Rack travel in m: 14.10...14.20
4th speed rpm : 700
Rack travel in m: 14.60...14.70
5th speed rpm : 500
Rack travel in m: 15.00...15.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 600
Del.quantity cm³/ : 220.0...224.0
1000 s: (218.0...226.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: ?
Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 275
Del.quantity cm³/ : 140.0...175.0
1000 s: (-)

LOW IDLE

Speed rpm : 275
Del.quantity cm³/ : 14.0...24.0
1000 s: (-)

Remarks:

: MACK # 313 CC 5104 P
: 1

See VDT-I-MAC 002

PLE dimension = 0.670" - 0.744"

The test specifications apply to test-
ing of the injection-pump assembly with
the genuine engine/nozzle-and-holder
assembly

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 12,0 c
Edition : 06.04.90
Replaces : 10.2.89
Test oil : ISO-4113

Combination no. : 0 402 046 219

Injection pump
Pump designation : PES6P120A32ORS426
EP type number : 0 412 026 039
Governor
Governor design. : RQV250...1100PA570
Governor no. : 0 421 813 295

Customer-spec. information
Customer : RVI

Engine : MIDS 063540

1st version kW : 195.0
Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 650

Rack travel in mm : 10.30...10.40

Del.quantity cm3/ : 17.9...18.1

100 s: (17.6...18.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 250.0

Rack travel in mm : 4.5...4.7

Del.quantity cm3/ : 1.9...2.5

100 s: (1.6...2.8)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.50...1.60

2nd speed rpm : 800

travel mm : 4.70...4.90

3rd speed rpm : 1100

travel mm : 6.80...7.00

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1270

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 650

Aneroid pressure h: 700

Del.quantity : 179.0...181.0

1000 : (176.0...184.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version
Control lever
position degrees: 57...65

Testing:
1st rack travel in: 8.10
Speed rpm : 1160...1170
2nd rack travel in: 4.00
Speed rpm : 1230...1260
4th rack travel in: 1400
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 5...13

Testing:
Speed rpm : 200
Minimum rack travel: 5.70
Speed rpm : 250
Rack travel in mm : 4.60...4.80

CONSTANT REGULATION
Speed rpm : 275...400

TORQUE CONTROL
Dimension a mm : 1.20
Torque control curve - 1st version
1st speed rpm : 650
Rack travel in m: 10.30...10.40
2nd speed rpm : 1100
Rack travel in m: 9.00...9.20
3rd speed rpm : 1020
Rack travel in m: 9.30...9.50
4th speed rpm : 890
Rack travel in m: 9.90...10.10

Aneroid/Altitude
Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 700

Measurement
Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 8.30...8.5000
2nd pressure hPa : 290
Rack travel in m: 9.90...10.00
3rd pressure hPa : 245
Rack travel in m: 8.90...9.10

START CUT-OUT

Speed 1/min : 170 (190)

N16

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 700
Speed rpm : 1100
Del.quantity cm³/ : 164.0...170.0
1000 s: (161.0...173.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 119.0...121.0
1000 s: (116.0...124.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 8.10
Speed rpm : 1160...1170

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 125.0...145.0
1000 s: (121.0...149.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 4.50...4.70
Del.quantity cm³/ : 19.0...25.0
1000 s: (16.0...28.0)
Spread cm³ : 8.00
1000 s: (12.00)

Remarks:

:

Start-of-delivery mark 12° cam angle
after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 a 3
 Edition : 01.02.90
 Replaces : 1.9.89
 Test oil : ISO-4113
 Combination no. : 0 402 046 300
 Injection pump
 Pump designation : PES6P120A320RS419
 EP type number : 0 412 026 037
 Governor
 Governor design. : RQV275...1100PA495-5
 Governor no. : 0 421 813 446

Customer-spec. information
 Customer : RVI

Engine : MIDR 062045

1st version kW : 191.0
 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve
 : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY
 Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 9.00...9.10

Del.quantity cm3/ : 16.2...16.4

100 s: (15.9...16.7)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 4.60...5.00

Del.quantity cm3/ : 1.9...2.5

100 s: (1.6...2.8)

Spread cm3 : 0.8

100 s: (1.2)

(B) Setting of injection pump
 with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250
 travel mm : 1.00...1.20

2nd speed rpm : 450
 travel mm : 3.40...3.80

3rd speed rpm : 850
 travel mm : 6.10...6.30

4th speed rpm : 1100
 travel mm : 8.00...8.20

GUIDE SLEEVE POSITION

Control-lever position
 Degree: -1

Speed rpm : 1150

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Aneroid pressure h: 700

Del.quantity : 162.0...164.0

1000 : (159.0...167.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 8.00

Speed rpm : 1170...1180

2nd rack travel in: 4.00

Speed rpm : 1225...1255

4th rack travel in: 1350

Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 60...68

Testing:

Speed rpm : 200

Minimum rack travel: 6.50

Speed rpm : 275

Rack travel in mm : 4.70...4.90

CONSTANT REGULATION

Speed rpm : 285...400

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm : 500

Pressure hPa : 700

Rack travel mm : 9.00...9.10

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 7.80...8.00

2nd pressure hPa : 220

Rack travel in m: 8.60...8.70

3rd pressure hPa : 195

Rack travel in m: 8.10...8.30

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700

Speed rpm : 700

Del.quantity cm³/ : 150.0...156.0

1000 s: (147.0...159.0)

Aneroid pressure h: -

Speed rpm : 500

Del.quantity cm³/ : 102.0...104.0

1000 s: (99.0...107.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.00

Speed rpm : 1170...1180

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm³/ : 140.0...160.0

1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275

Rack travel in mm : 4.60...5.00

Del.quantity cm³/ : 19.0...25.0

1000 s: (16.0...28.0)

Spread cm³ : 8.00

1000 s: (12.00)

Remarks:

:

Start-of-delivery mark 10.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 d 5
 Edition : 06.04.90
 Replaces : 29.3.89
 Test oil : ISO-4113

Combination no. : 0 402 046 328

Injection pump
 Pump designation : PES6P120A320RS419-2
 EP type number : 0 412 026 048
 Governor
 Governor design. : RQ275/950PA753-1
 Governor no. : 0 421 801 377

Customer-spec. information
 Customer : RVI

Engine : MIDS/PS062045 FC

1st version kW : 144.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 500

Rack travel in mm : 8.70...8.80

Del.quantity cm3/ : 11.9...12.1

100 s: (11.6...12.4)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 4.9...5.1

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 525

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 500

Aneroid pressure h: 700

Del.quantity : 119.0...121.0

1000 : (116.0...124.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 525

Rack travel in mm : 20.0

Testing:

1st rack travel in: 7.20

Speed rpm : 1015...1030

2nd rack travel in: 4.00

Speed rpm : 1150...1080
4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 275
Rack travel in mm : 3.50

Testing:

Speed rpm : 200
Minimum rack travel: 5.30
Speed rpm : 275
Rack travel in mm : 3.40...3.60
Rack travel in mm : 2.00
Speed rpm : 300...340

TORQUE CONTROL

Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 500
Rack travel in m: 8.70...8.80
2nd speed rpm : 950
Rack travel in m: 8.00...8.20
3rd speed rpm : 750
Rack travel in m: 8.30...8.50

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 500
Pressure hPa : 700

Measurement

Speed 1/min : 500

1st pressure hPa : -
Rack travel in m: 7.90...8.00
2nd pressure hPa : 245
Rack travel in m: 8.50...8.60

START CUT-OUT

Speed 1/min : 195 (215)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 700
Speed rpm : 950
Del.quantity cm³/ : 139.0...143.0
1000 s: (136.0...146.0)
Aneroid pressure h: -
Speed rpm : 500
Del.quantity cm³/ : 104.0...106.0
1000 s: (101.0...109.0)

N20

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 7.20
Speed rpm : 1015...1030

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 140.0...160.0
1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 3.40...3.60

Remarks:

:

Start-of-delivery mark 9.5° cam angle
after start of delivery cyl. 1

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 d 6
 Edition : 23.03.90
 Replaces : 2.10.89
 Test oil : ISO-4113
 Combination no. : 0 402 046 329
 Injection pump
 Pump designation : PES6P120A32ORS419-2
 EP type number : 0 412 026 048
 Governor
 Governor design. : RQ275/950PA843
 Governor no. : 0 421 801 378

Customer-spec. information
 Customer : RVI

Engine : MIDS/PS062045D/A

1st version kW : 129.0
 Rated speed : 1900

TEST BENCH REQUIREMENTS

Test oil
 inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
 assembly : 1 688 901 019

Opening
 pressure, bar : 207...210

Orifice plate
 diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
 x Wall thickness
 x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
 Insp. values in parentheses
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
 : (2.75...2.95)
 Rack travel in mm : 9.00...12.00
 Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 500

Rack travel in mm : 8.00...8.10

Del.quantity cm3/ : 10.5...10.7

100 s: (10.2...11.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 275.0

Rack travel in mm : 3.5...3.7

Del.quantity cm3/ : 1.7...2.3

100 s: (1.4...2.6)

Spread cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -2

Speed rpm : 525

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 500

Del.quantity : 105.0...107.0

1000 : (102.0...110.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version

Setting point:

Speed rpm : 525

Rack travel in mm : 20.0

Testing:

1st rack travel in: 6.50

Speed rpm : 1015...1030

2nd rack travel in: 4.00

Speed rpm : 1040...1070

4th rack travel in: 1300
Speed rpm : 0.00...1.00

LOW IDLE 1
Setting point w/out bumper spring
Speed rpm : 275
Rack travel in mm : 3.6

Testing:
Speed rpm : 200
Minimum rack travel: 5.20
Speed rpm : 275
Rack travel in mm : 3.50...3.70
Rack travel in mm : 2.00
Speed rpm : 300...340

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 500
Rack travel in m: 8.00...8.10
2nd speed rpm : 950
Rack travel in m: 7.40...7.50
3rd speed rpm : 775
Rack travel in m: 7.60...7.80

START CUT-OUT

Speed 1/min : 210 (230)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 950
Del.quantity cm³/ : 126.0...130.0
1000 s: (123.0...133.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 6.50
Speed rpm : 1015...1030

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm³/ : 135.0...165.0
1000 s: (131.0...169.0)

LOW IDLE

Speed rpm : 275
Rack travel in mm : 3.50...3.70

Remarks:

N22

:
Start-of-delivery mark 9.5° cam angle
after start of delivery cyl. 1

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 8,8 m
Edition : 16.02.90
Replaces : 5.8.88
Test oil : ISO-4113

Combination no. : 0 402 046 334

Injection pump
Pump designation : PES6P120A32ORS515
EP type number : 0 412 026 053
Governor
Governor design. : RQV300...1150PA527K
Governor no. : 0 421 815 164

Customer-spec. information
Customer : RVI

Engine : MIDR 062030B

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00

Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1150

Rack travel in mm : 10.20...10.30

Del.quantity cm³/ : 14.6...14.8

100 s: (14.3...15.1)

Spread cm³ : 0.5

100 s: (0.9)

2nd speed rpm : 600.0

Rack travel in mm : 4.6...4.8

Del.quantity cm³/ : 1.8...2.4

100 s: (1.5...2.7)

Spread cm³ : 0.8

100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 1.70...2.10

2nd speed rpm : 900

travel mm : 5.80...6.20

3rd speed rpm : 1150

travel mm : 7.40...7.60

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

Speed rpm : 1225

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Del.quantity : 146.0...148.0

1000 : (143.0...151.0)

Spread cm³ : 5.00

1000 : (9.00)

RATED SPEED

1st version

Control lever

position degrees: 115...123

Testing:
1st rack travel in: 9.20
Speed rpm : 1235...1245
2nd rack travel in: 4.00
Speed rpm : 1305...1335
4th rack travel in: 1450
Speed rpm : 0.00...1.00

LOW IDLE 1
Control lever
position degrees: 62...70

Testing:
Speed rpm : 200
Minimum rack travel: 6.30
Speed rpm : 300
Rack travel in mm : 4.70...5.00

CONSTANT REGULATION
Speed rpm : 320...440

TORQUE CONTROL
Dimension a mm : ?
Torque control curve - 1st version
1st speed rpm : 1150
Rack travel in m: 10.20...10.30
2nd speed rpm : 750
Rack travel in m: 9.20...9.30
3rd speed rpm : 500
Rack travel in m: 8.60...8.80
4th speed rpm : 350
Rack travel in m: 8.40...8.80

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version
Speed rpm : 750
Del.quantity cm3/ : 123.0...129.0
1000 s: (120.0...132.0)
Speed rpm : 500
Del.quantity cm3/ : 69.0...75.0
1000 s: (66.0...78.0)

BREAKAWAY

1st version
1mm rack travel less than

full load rack tr: -1.00
Speed rpm : 1235...1245

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 130.0...150.0
1000 s: (126.0...154.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : -5.20...-5.60
Del.quantity cm3/ : 13.0...19.0
1000 s: (10.0...22.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

Start-of-delivery mark 10.5° cam angle
after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MAN 11,9 o
Edition : 12.02.90
Replaces : -
Test oil : ISO-4113
Combination no. : 0 402 046 339
Injection pump
Pump designation : PES6P110A720LS524
EP type number : 0 412 016 073
Governor
Governor design. : RQ750PA661-1
Governor no. : 0 421 801 330

Customer-spec. information
Customer : MAN

Engine : D2866E

1st version kw : 125.0
Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve : 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening
pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.50...3.60
: (3.45...3.65)
Rack travel in mm : 9.00...12.00

Firing order : 6- 2- 4- 1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 700

Rack travel in mm : 13.40...13.50

Del.quantity cm3/ : 14.3...14.6

100 s: (14.0...14.8)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0

Rack travel in mm : 6.0...6.2

Del.quantity cm3/ : 1.5...2.0

100 s: (1.2...2.2)

Spread cm3 : 0.4

100 s: (0.7)

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 143.0...146.0

1000 : (140.5...148.5)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Testing:

1st rack travel in: 12.40

Speed rpm : 750...755

2nd rack travel in: 4.00

Speed rpm : 800...813

4th rack travel in: 950

Speed rpm : 0.00...1.00

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/ : 90.0...110.0

1000 s: (86.0...114.0)

Remarks:

: MAN-NR. 2-7966

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : RVI 9,8 k
Edition : 06.04.90
Replaces : -
Test oil : ISO-4113

Combination no. : 0 402 046 340

Injection pump
Pump designation : PES6P120A320RS525
EP type number : 0 412 026 058
Governor
Governor design. : RQV300...1050PA955
Governor no. : 0 421 813 856

Customer-spec. information
Customer : RVI

Engine : M1DS062045J

1st version kW : 160.0
Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil
inlet temp. °C : 38...42

Overflow valve
: 1 417 413 025

Inlet press., bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter
x Wall thickness
x Length mm : 6.00X1.50X1000

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1050

Rack travel in mm : 9.20...9.30

Del.quantity cm3/ : 13.5...13.7

100 s: (13.2...14.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 5.3...5.5
Del.quantity cm3/ : 1.5...2.1
100 s: (1.2...2.4)

Spread cm3 : 0.8
100 s: (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1050
travel mm : 8.00...8.20
2nd speed rpm : 300
travel mm : 1.10...1.50
3rd speed rpm : 430
travel mm : 3.40...4.00
4th speed rpm : 1400
travel mm : 11.00...12.00

GUIDE SLEEVE POSITION

Control-lever position
Degree: -1
Speed rpm : 1075
Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version
Speed rpm : 1050
Del.quantity : 135.0...137.0
1000 : (132.0...140.0)

Spread cm3 : 5.00
1000 : (9.00)

RATED SPEED

1st version

Control lever
position degrees: 298...306

Testing:

1st rack travel in: 8.20
Speed rpm : 1120...1130
2nd rack travel in: 4.00
Speed rpm : 1175...1205
4th rack travel in: 1350
Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever
position degrees: 244...252

Testing:

Speed rpm : 200
Minimum rack travel: 7.80
Speed rpm : 300
Rack travel in mm : 5.40...5.30

CONSTANT REGULATION

Speed rpm : 310...430

START CUT-OUT

Speed 1/min : 220 (240)

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 700
Del.quantity cm3/ : 126.0...132.0
1000 s: (123.0...135.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 8.20
Speed rpm : 1120...1130

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140.0...160.0
1000 s: (136.0...164.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.30...5.50
Del.quantity cm3/ : 15.0...21.0
1000 s: (12.0...24.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

: